An Address
ON
THE LARGE INTESTINE AND ITS WORK.

DELIVERED AT THE ANNUAL MEETING OF THE CAMBRIDGE AND HUNTINGDON BRANCH OF THE BRITISH MEDICAL ASSOCIATION, 1913.

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IT is not long since such a subject as that I have selected would have appeared barren—indeed, offering little more than the descriptive detail available to the anatomist or the brief summary of the clinician content with endeavouring and often succeeding in making a correct diagnosis and then relying upon traditional experience and knowledge for treatment. Having, however, had the privilege of seeing and observing the progress of surgery during the last thirty years, and having met with many difficulties in the successful treatment of disease by operative measures, I was prompted to make an attempt to seek out the cause of some of these difficulties.

After the publication of the discovery by Pasteur of the biological nature of fermentation, and after the application by Lord Lister of that knowledge to the treatment of diseased processes, young men with new ideas naturally came to occupy the stage. These men, who were fascinated by the new doctrine—namely, that disease could be and was caused by an invasion of the body by a living organism—began to apply the new doctrine indiscriminatingly. Both Lord Lister and Pasteur preached that, though invasion is possible, the further development of the invader does not take place unless there be the requisite food and other suitable conditions present. It was, however, not long before it was forgotten, or appeared to be forgotten, that it was the human body itself that was at fault, and that the fluids of the body presented not only food of proper composition, but also that they were under conditions suitable for the success of an invasion. We have in our defensive resources, the antiseptic or aseptic method or a combination of the two, means whereby we endeavour—and, it can hardly be denied, with great success—to prevent invasion. But, should invasion occur in spite of our vigilance and care, there are at our disposal subtle organic substances the administration of which, we sincerely hope, will some day be attended with great and lasting success; such are the antibodies, serums, and vaccines of many kinds.

While your preventive measures may be perfect, and you may be cocksure of your serum or vaccine, yet these will avail you little if the body is not clean in a physiological sense, for if not clean it contains material favourable to the growth of one or other of those small enemies of ours which are ever ready to seize upon suitable food, enemies which, if not present in our internal tissues, exist as normal inhabitants of all our coverings, internal and external—the mucous membranes and the skin. It behoves us, therefore, not only to adopt measures against invasion, but also to do away with all that renders our bodies unclean, and to remove the substances which are not natural to us, so allowing their places to be taken by tissues and juices of normal or standard composition, and infertile, from lack of suitable food for the growth of our enemies unless in overwhelming numbers or attacking points rendered vulnerable by serious injury.

The great problem, then, is, how can we maintain our bodies in a state of physiological cleanliness? Well, the complex machinery of the bodies of men and beasts depends primarily for its smooth and efficient working upon the fuel consumed and upon the due and proper expulsion of all refuse. This refuse is naturally divided into two portions: (1) That which comes from an individual organ or part of the complex machine; and (2) that which is common to the whole. I desire to-day to draw your attention only to the refuse that is common to the body as a whole, and to show, if possible, what, if any, advantages accrue from the changes that arise in that refuse during its transit along that portion of the alimentary canal modified into the large intestine, to point out the conditions essential for the due progress of the faeces along the canal, and, lastly, to allude to a simple, sure sign of delay in transit.

THE LARGE INTESTINE.

The enlarged terminal portion of the gut acquires greater and greater importance in the progressive changes in size and form seen in the vertebrate series until man is reached. It will, therefore, not be uninteresting to trace the different steps in the evolution of the large intestine, because collectively, if not individually, the various changes that arise therein show that in each a purpose exists if we are but fortunate enough to discover it.

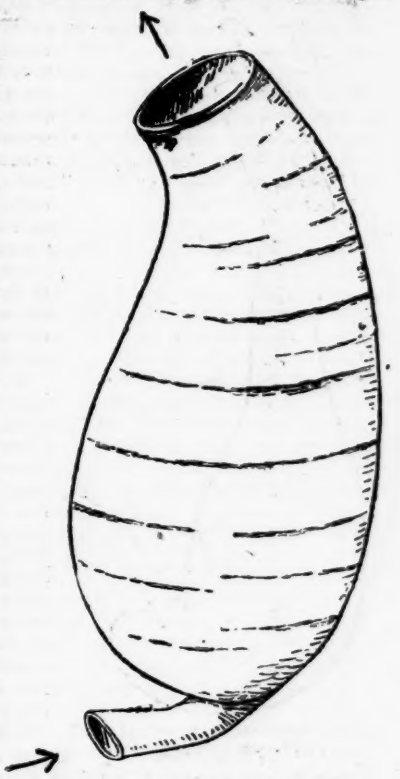

Fig. 1.—*Chylone mydas.* Two-thirds natural size.

The first indication of the formation of a differentiated large intestine may be seen in the tortoise, for example, *Chylone mydas*. In this animal the last few inches of the intestinal tract are dilated to form a simple, elongated, ovoid reservoir for the reception of the intestinal refuse, and from it is an opening direct into the cloaca and thence to the exterior. In *Python spilotes* there is not merely a dilatation; there now comes into existence a recess directed backwards, that is, in a direction contrary to the outward flow of faeces; this constitutes the most primitive form of caecum met with. In examples from earlier forms there is no other change apparent than the enlargement of the lumen without undue thinning or any other obvious change in the wall. In the *Python* there is, then, a recess into which some of the contents of the intestine as they are driven onwards into the terminal portion find their way either through the establishment of an eddy or by definite and reverse muscular action. From these two initial forms we may easily follow the evolution of the large intestine. If we suppose this distended and terminal piece of gut to be proportionately lengthened we can obtain the 5 to 6 ft. found in man, and if we likewise increase the recess we may obtain the large caecum of the common rabbit.

Fig. 2. *Python spilotes.* Natural size.

A statement of the characteristics of the colon is, however, incomplete without mention of the sacculations which, in the higher mammals, form its most striking feature. If we take as our first illustration of the large intestine that of the *Aard wolf*, it will be observed that there is dilatation of the first part only, the recess forming the caput caecum-coli with a thin but uniform muscular wall. This ends in a long terminal portion with a very well-developed longitudinal muscular coat similar in appearance to that of the human rectum. Here, then,

is a colon divisible into two portions—(*a*) short and distended part with a thin uniform wall, and (*b*) long and less distended portion with a thick muscular wall. Again, in *Hyrax capensis* there is, with one exception, a similar arrangement, for here the thin or first portion of the external wall has its muscular fibres grouped into three bands instead of being uniformly distributed over the wall, with the result that in between the bands the thinner portions are apt to, and do actually, bulge to form saccuations. Here, then, we have the beginnings of the colon as it is seen in man—a distended and sacculated first portion, and a less distended and uniformly coated second portion. In man, however, the first portion is by far the longer, the second the shorter, forming about a sixth of the whole.

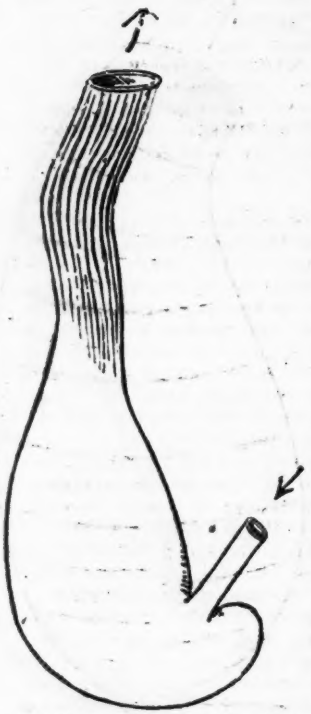

Fig. 3.—*Proteles cristatus*; Aard wolf. Half natural size.

A brief reference must here be made to the vermiform appendix, which, performing but little useful function, frequently gets into mischief. The appendix, which is the representative of the terminal portion of the simple or complicated caecum, plays, indeed, a definite rôle, and so long as it continues to play its part small or great, we hear nothing of it. In the rabbit, it will be remembered, a spiral valve directs the movement of the contents through the caecum, but in man they just pass into its lumen and back again with great regularity. To ensure this, the human appendix, though small in size, retains a well-developed muscular wall (circular and longitudinal) which is capable of contracting and relaxing in obedience to ordinary stimuli, and, further, is capable of acting in two and opposite directions—towards the free end and back again to the caput caecum-coli.

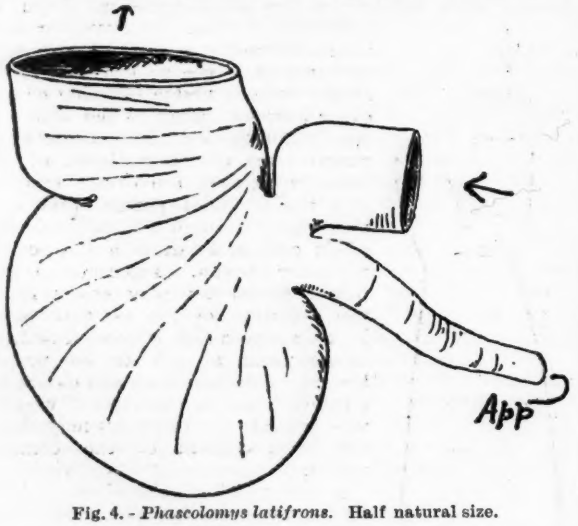

Fig. 4.—*Phascolomys latifrons.* Half natural size.

The Faecal Refuse in the Large Intestine.

The first portion from its enlargement is especially designed for delaying the onward and outward flow of the intestinal contents, and in consequence the rate of flow of the contents of the ileum rapidly diminishes as soon as the ileo-caecal valve is passed. This is in accordance with the condition which obtains when a stream passing through a narrow tube suddenly emerges into a wider one—the greater the disparity in width the greater the decrease in the rate of flow. The recess—the caput—allows of a back flow with eddies more or less pronounced according to the degree of fluidity of the contents and the force with which the stream enters.

The shape and size of the caput suffices, then, to induce a reduction in the rate of flow and to give rise to eddies so as to favour thorough mixing. But, in addition to the formation of a large lumen and a recess, it is found that the external muscular coat of the gut, instead of remaining of uniform thickness and covering the entire extent of the wall, in many of the higher mammals—especially in the vegetable and mixed-food eaters—disposes itself into three distinct bands, wide or narrow, with definite intervals. Further, these bands appear to be, and actually are, of shorter length than the gut itself, acting in much the same mechanical way as a "gather" in a garment. Moreover, the greater the distension of the lumen the shorter, relatively speaking, these bands appear to become. The practical result of this special disposition of the external muscle coat in the caput and the first portion of the large intestine is to induce a movement which continues the work set up by the establishment of eddies; that is, it gives rise to a churning of the contents and thus keeps going the mixing process automatically started as the refuse passes from the small into the large intestine.

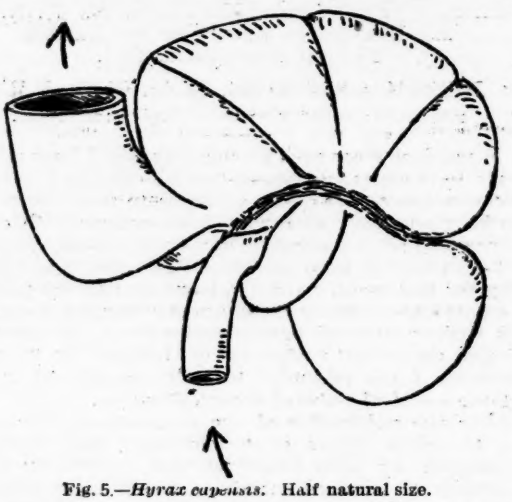

Fig. 5.—*Hyrax capensis.* Half natural size.

The large intestine, then, by its modification becomes mechanically fitted to allow (1) of slowing of the onward stream of the intestinal contents, (2) of starting a mixing process by the formation of eddies (due simply to the passage from a narrow to a wider tube), and (3) of churning the contents so as to obtain a thorough mixture.

The mixing of the faecal contents appears to be essential, and, though it takes place especially in the caecum, yet it may, and does, occur in the entire length in which the peculiar triple-band disposition of the external muscular layer is found. While this churning is taking place another important process occurs—namely, the rapid absorption of water, the greater part of 70 per cent. of the total being absorbed during transit through the large intestine. Consequently the mixing and drying of the contents go on simultaneously in the first portion of the large intestine.

As the contents become drier the result of the special movement is to induce the formation of the faeces into roundish masses of the size natural to the capacity of the gut beyond, and of the form and shape in which, under natural conditions, the refuse of the body is expelled.

Thus in the first portion of the large intestine the contents of the ileum accumulate, undergo a thorough mixing and churning, lose the greater portion of their water, and then become moulded into the shape and size suitable for the very last piece of the gut, which merely drives its contents onward as occasion requires.

The Chemical Changes in the Refuse during its Transit.

Although very little is known regarding the various, normal and abnormal, fermentative changes that occur

and of the specific chemical substances which result from such processes, we do possess indirect evidence that some substance or substances are formed and absorbed into the system with beneficial effects. When the refuse dries up to the natural standard in a given person, and there is no irregularity in the performance of the act of defaecation, health is at its highest standard, and associated with this is the feeling that "a man is at his best." When, however, the contents become too dry and the expulsion is delayed beyond the natural time, the first degree, as it were, of constipation comes to exist—a condition accompanied by heaviness, with inability to collect one's thoughts, with headache and irritability of temper, and with want of concentrative power to perform mental or bodily work.

If I may be permitted to digress into the realm of agriculture, I would like to point out that in show (cattle) animals, which are kept up to the highest standard of "bloom," as it is technically termed, the consistency of the faeces and the regularity of their expulsion are kept almost without variation. There are few men who really understand this and who can regulate it to a nicety; and it is not unusual to find that high-priced bulls, on changing hands at a sale, not infrequently suffer from lack of this particular kind of knowledge and judgement in their next attendant. Such animals commonly enough die from "stoppage," which kills them with greater ease and rapidity than is the case with man.

What is derived from the contents of the large intestine that produces this "bloom" in animals or the feeling of good health and good spirits, etc., in man? What is the nature of the substance or substances that are absorbed in minute quantities? A rich field for inquiry awaits any eager and persevering student of this subject. All we can now say is that there is evidence that we obtain some material of importance to our bodies from the refuse as it passes along the colon, and so long as the quantity absorbed is small a pleasant feeling of enjoyment in life results, whilst if it increases beyond a definite but unknown limit unpleasant consequences are apt to manifest themselves.

The mechanical uses of the modifications in capacity, in form, and in muscular disposition seen in the human colon are, then, clearly of two kinds. The *one* is for ensuring a thorough mixing and churning of the contents by to-and-fro movement to make delay effective, and the *other* is for retaining the formed, moulded, and harmless faeces and for expelling it at convenient times.

The object of the mixing is to induce and promote a new digestive process, bacterial or otherwise, so as to abstract from the refuse something which is of a stimulating nature and which gives "bloom" to the show animal and a feeling of being "in the best of health and spirits" to the man.

This process occurs especially, if not entirely, in that portion of the large intestine which extends from the caecum to near the end of the sigmoid. The greatest activity is seen in the caecum, less in the ascending colon, and still less beyond, so that the contents, after reaching the sigmoid and while in the rectum, undergo little, if any, change.

The Mechanism for the Transit of Faeces along the Large Intestine.

We have seen how the large intestine is modified to serve certain purposes, and that definite as well as ill-understood processes occur in its contents; it now remains to show the mechanism whereby the contents, with or without deleterious substances, are conveyed along their natural course from the moment they enter this channel. We know where the power lies, the nature of the material to be conveyed, and the composition and source of the lubricant necessary for transit. When the contents are fluid lubrication is superfluous, but as the drying process occurs so does the increase in the formation of a lubricant become necessary, and the dryer the refuse the greater the amount of lubrication required. The ease with which the onward progress of the faeces takes place, then, depends upon three factors: (1) The strength of the muscular wall and accessory power of the abdominal walls; (2) the fluidity of the contents; and (3) the amount and quality of the lubricant. The power in the wall of the gut is derived solely from the central or subsidiary nervous system, and the amount transmitted to this portion of the gut depends directly upon the total amount available and upon the portion of that total left unconsumed by the exercise of the will. For example, if the will insists on the brain working until all the energy available is consumed there will be none left to supply the muscular wall of the large intestine; or if the nerve energy be consumed in excessive exercise or work, again there will be none left. Further, the effect produced by the contraction of the muscular wall depends upon the size of the lumen and the friction between the contents and the lining of the gut. Now the larger the lumen, say from too great an accumulation, the less effective will be the contraction of the muscle; and the less the degree of lubrication the greater must be the friction; consequently, the less the proportionate result induced by the contraction of the muscle of the wall when the gut is overdistended and the contents too dry.

The lubricant of the large intestine is mucus, which is secreted by the mucous cells of the tubular glands lining the mucous membrane. There is no lubricant, either natural or artificial, that exceeds mucus of normal composition in effectiveness. Whenever the contents of the large intestine are fluid or semifluid the necessity, as I have already said, for the secretion of mucus of normal composition does not arise, but as the faecal contents dry it is essential that the secretion of mucus be increased, otherwise the resistance between the dried contents and the wall rapidly augments and eventually becomes so great that no amount of muscular force exerted by the gut will effect any appreciable change in the position of the contents, and "stoppage" results. The amount of mucus secreted, therefore, should vary directly with the degree of dryness of the faecal contents, but there is no power known which automatically stimulates the secretion of the mucus when it is required. So far as can be judged, the secretion of mucus depends upon other factors, and the chief of these is the maintenance of a normal composition of the blood and lymph circulating through the wall of the gut in which the mucus-secreting glands lie.

The due progress of the contents of the large intestine is, we know, essential to health, and any alteration in the rate of transit or in the digestive processes gives an indication as to whether the tissues of the body are supplied with the food they require, whether they get rid of all the waste material due to work, and whether the natural repair for their proper maintenance takes place. Any interference, however induced, with this progress necessarily disturbs not only the colon itself, but also the remainder of the body, for the refuse common to the entire body passing along, being delayed in transit, is especially liable to undergo further changes, which end in the production of absorbable and deleterious substances of unknown composition. Such substances, however subtle their composition, are known rather by the effect they produce than by any chemical reaction or physical properties they may possess. Some of them have been identified; most have not. This opens up the very extensive and important field spoken of as "autointoxication," to which I shall not now refer.

The consequences of slight retardation in transit, simple constipation, with its associated disturbances, are familiar to all of you. Although we cannot be quite sure, we think and believe we are correct when we say that the symptoms are due solely to the absorption of some subtle product or products of a particular form of fermentation or chemical disintegration which is liable to take place in the faecal contents whose transit is thus delayed. There is, I venture to think, one sure sign of this condition. It is the enlargement of the tongue until it becomes too large for the mouth, and so takes upon itself the impress of the teeth.

THE TONGUE AS AN INDICATOR OF EXCESSIVE FLUID IN THE TISSUES OF THE BODY.

The tongue, as you know, is an organ which is peculiarly constructed. Its mass is made up of bundles of muscle fibres some of which are arranged in vertical, longitudinal planes with other fibres passing from side to side through or between them. Consequently the bundles of muscles cross one another, and in order to give each of them complete freedom of movement independent of its neighbour, the material intervening between the different sets of bundles and holding them together is very delicate

areolar tissue in which are large lymph spaces. An organ of this structure lends itself to great variations in size according to the amount of fluid in the lymph spaces between the bundles of muscle fibres. This is exemplified in acute inflammation or oedema of the tongue—say, after a sting from a wasp in a person susceptible to the poison of that insect. Once the structural nature of the substance of the tongue is comprehended, it is easy to understand what follows.

A tongue which is indented by the teeth is obviously one that is too large for the mouth, and if enlargement be only temporary it will be one in which the lymph spaces in the intermuscular areolar tissues are filled and even distended with fluid containing the waste products of the surrounding tissues, if not of others derived from various organs and tissues of the body. This state of the tongue is, to my mind, an indication, not of any peculiar local condition in this organ, but of a similar condition throughout the body wherever the tissues, from their physical structure, will allow of the accumulation of fluid—lymph of normal composition or one charged with deleterious substances. Accordingly the indented oedematous tongue tells first of all that there is an excess of fluid in the tissues of the body, and my own clinical experience shows that this excess of fluid is most commonly associated with undue delay in the transit of refuse along, and retention of faeces in, the large intestine—coprostasis. Delay in the expulsion of formed and moulded faeces, even if it extends to a period of many days, is not in many persons attended with any ill effects, and this is doubtless within the experience of all of you. This fluid in excess is, we may be quite sure, not mere normal lymph, but lymph charged with subtle chemical substances which probably vary a great deal in their composition. When this accumulation of faeces—coprostasis—comes to exist, the first sign of that physiological uncleanliness I have spoken of shows itself. I am convinced that this condition of excessive fluid in the lymph spaces of the body is a most potent, but not of course the only, factor in making disease possible in any given individual, and the most powerful in controlling the results of one and all surgical operations. Therefore the conditions which may and do arise in consequence of irregularities of many kinds in the transit of the common refuse of the body, chiefly along the first portion of the large intestine, are very numerous and of great importance to the physician and surgeon.

Conclusions.

The interest taken in the colon and its functions during the last few years has been very great. In 1901 Dr. Barclay-Smith put forward a suggestion that in consequence of the advance in the preparation of food, rendering it digestible, nothing now remains for the colon to do, and that it may be regarded as a useless appendage to our bodies. Sir Arbuthnot Lane goes further, and characterizes it as a cesspool, presumably either to be cleansed at periodic and stated intervals, as our sanitary cesspools are to-day in some old-fashioned places, or to be altogether done away with, as in the modern method of sanitation. Metchnikoff regards it as having developed in order to act as a reservoir, so that primitive man might run after his prey or away from his pursuing enemies without undergoing the risk of stopping or slowing his rate of progress to evacuate his intestine. Professor Keith, without expressing any decided opinion for or against the above hypothesis, wonders whether we cannot restore to the colon its former function. He appears to suggest that ingenuity might yet be exercised with advantage in the direction of finding an agreeable dietary which will give back its old work to this large tract of the alimentary canal, and that unless something useful be done the colon will certainly come to be regarded under our present civilization as an incumbrance to man in the performance of his daily work.

In conclusion I would say the work of the colon, apart from its use as a storage and expellor of the common refuse, is, so far as I have been able to discover, (1) to dry the contents as they leave the small intestine, and (2) to get some useful substance out of the refuse while it is mixed and churned and undergoing fermentation with, it may be, disintegration. This substance, though as yet of unknown quality, gives to the body that which it requires for the development of that feeling which is best described as being "in the best of health and spirits"; further, it is something of all-important value to the individual. Excess of it is deleterious; lack of it is attended with pronounced changes in general nutrition, and perhaps progressive inanition, leading after a variable time to death from simple loss of vigour and strength.

ON HEALTH, FATIGUE, AND REPOSE.

Being Extracts from the Lady Priestley Memorial Lecture Delivered before the National Health Society.

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Lord Beaconsfield in one of his many luminous utterances declared that the great social question which should engage the attention of statesmen is the health of the people. The health of the people is the wealth of the nation, and Huxley, in one of his letters to John Morley, wrote that "The great thing to work for, as time goes on, is vigour as one lives," that is to say, "health," which is just another way of saying "fitness" for the duties that lie before us. With Sir Philip Sidney we may say: "Th' ingredients of health and long life are great temperance, open air, easy labour, little care."

In health the machinery does not chafe in the working—all goes on silently, smoothly, and without noise, while there is complete adaptation to the environment. The one part of the body cannot say to the other, I have no need of thee. Organs, however insignificant they may seem, may prove to be of paramount importance in the economy, as has been proved by the recent discoveries regarding the functions of such little-known and apparently unimportant organs as the pituitary body, the pineal, thyroid, and thymus glands, not to mention others whose functions and history we are just beginning to discover.

Most of the breakdowns in a man's life, however, are due to the driver himself, either because of ignorance or recklessness, or both. "We do those things we ought not to do, and we leave undone the things which we ought to have done," and then we wonder "that there is no health in us."

Our forefathers used the word "health," wholth or wholeness, to indicate soundness not only of their bodies, but also of their implements and utensils used for hunting, for cooking, and for weapons of war and the chase. The highest perfection is a "sound mind in a sound body." "Life without health is a burden, with health it is joy and gladness."

Fatigue is the result of over-action, and above all sustained and continuous action of an organism as a whole, or of one or more of its organs. Not only is the overworked organ itself affected, but owing to the chemical or metabolic changes underlying all sustained strenuous endeavour and action—without sufficient periods of rest or repose—other organs and parts of the body are speedily implicated. In fact, as pointed out by F. S. Lee, fatigue is a universal biologic phenomenon, while the activity of living substance tends to inhibit or restrain its further activity.

Muscular Fatigue.

In muscular fatigue the chemical reserves upon which our movements depend are gradually used up; the greater the effort the greater the metabolism and consequent expenditure. In addition, however, poisonous by-products, more especially carbonic acid and lactic acid and acid potassium phosphate, are formed. These products are not removed with sufficient rapidity, and remain to clog the machine, and indeed act as toxins. These fatigue products not only poison the organ in which they are formed, but they pass into the blood and are conveyed by it to other parts of the body, and poison them also, before they are destroyed or excreted.

The study of fatigue, therefore, is largely a study of chemical metabolism. When the muscles are in action normally their activity depends in part on the supply of

substances allied to the sugars. In overworked muscles protein bodies are also broken up. The result is the over-formation and imperfect removal of the "fatigue products" or body toxins which have a powerful depressant action. Overwork without sufficient repair of an organ, be it brain or eye, the digestive organs or muscles, is the primary cause of fatigue. The symptoms and signs, therefore, will be as varied as the organs themselves.

All the organs of the body cannot run at full speed at the same time. Severe bodily exercise is incompatible with full digestive activity. "After dinner rest awhile" is part of the proverbial wisdom of Salerno. Mental fatigue greatly impairs bodily activity, and physical or muscular fatigue has a distinct effect on brain activity. Every organ in activity requires a larger supply of blood—its blood vessels dilate—and there is not enough blood to give all organs an extra supply at the same time. It was never so intended in the scheme of Nature, though some people seem to act as if it were so, and they reap the disastrous consequences. Not only the amount of blood but the quality of the blood is of importance.

Muscles tire very quickly when they are under tension. With what a sense of relief does the trained soldier on occasion welcome the command "Stand at ease"! It is easier to walk and keep moving than to stand still in one position. The continuous strain of standing is only too well known to teachers, to shop girls and shop men. Something has been done recently to ameliorate the condition of shop life by the provision of seats for resting when occasion affords.

There is a limit to a man's working power, both physical and mental, varying with the individual. Weber long ago showed that in order to obtain the greatest amount of mechanical work from a muscle, the weight the muscle had to lift must not be too great. So it is with the working hours of the working man. Long hours do not necessarily mean more work or better work.

Overwork or any unwonted physical exertion gives rise to a sense of weariness or tiredness which indicates a lessened capacity for exertion both of body and mind. Fatigue, therefore, has a double aspect—first, a sensation of tiredness more or less definite in character, and, secondly, a decrease in the power of exertion, so that one cannot go on with the effort or can do so only after powerful excitement or stimulation. A diminution or slowing down of the muscular power represents the physical or objective side, and the sensations of fatigue the psychical or sensory side.

Gymnast's Fever and the Importance of Oxygen.

After a long day's walk, more especially to one unused to it, not only are the legs tired, but one feels "sore all over," in the arms and trunk alike, though these parts have participated relatively little in the actual expenditure of energy. The enormous strain of what is called "forced marching" is well known amongst soldiers. Ergographic tracings prove convincingly how severe is the strain and drain on the soldier's physical resources and also the prolonged effect in his output of mechanical work. The too ardent untrained Alpine climber, the enthusiastic unseasoned gymnast, may at night have marked symptoms of fever, due to the action of the poisonous toxins produced in his own body, and it is some time before their effects pass off. The best remedy is sleep. So marked are the effects of the toxins that this post-athletic febrile attack has been called "gymnast's fever."

It would not serve any good purpose to discuss here the means by which physiologists have analysed the seat of fatigue in a nerve-muscle preparation or the relation between what is called the "refractory period" and fatigue. The gist of study of the refractory period of the heart and other organs is thus expressed by Verworn: "In all living substances, directly following an excitation, there must exist a period in which its irritability is reduced." The important observations of Dr. Leonard Hill on the effects of a liberal supply of oxygen in fatigue are most important, while Verworn goes so far as to say, "Fatigue is invariably asphyxiation."

Fatigue of Organs of Sense.

Medical men are constantly warning the public, and pointing out to teachers of youth, the disastrous effects of eye-strain. Tea-tasters know well how rapidly the sense of taste—the palate, so-called—becomes fatigued. We all know how soon our sense of smell is paralysed. It is partly for this reason that persons breathing an almost putrid atmosphere fail to detect what is painfully unpleasant to any one entering such a room from the fresh air outside. For the same reason one has to sniff a rose in order to smell its perfume.

The sense of hearing under certain conditions is no exception. The dull dreary drip of a long and uninteresting lecture, or a monotonous discourse delivered in, it may be, an atmosphere not too hygenic, soon has its effect on the audience. The hearing centre of the brain through the ear is soon lulled to inactivity, a condition which speedily affects neighbouring regions of the brain. The combined result is somnolence, and it may be sleep. Then a sudden loss of control and relaxation of the muscles of the back of the neck, and the senseless head nods. When chin meets chest the sleeper awakes in a state of semi-somnolent surprise. In this case there is weariness and lassitude rather than fatigue in the true sense of the word. To what extent the loss of tone of one's muscles and the occasional somnolence in certain churches—and, it may be, in chapels—is due to the poisonous nature of the atmosphere I am not prepared to say. Perhaps there are other factors. Somnolence is not in all cases to be attributed to the sermon, but rather to the badly ventilated atmosphere. Although Sunday is officially the first day of the week, to most churchgoers it is the close of the week, a factor not without significance in the explanation of the phenomenon.

Pleasures and Emotions.

It is the same with over-driven pleasures, and also with intense emotions, as may be seen in the beautiful picture of St. Catherine by Sodoma in the church of San Domenico in Siena. We say pleasures pall. It is that their evanescent character necessitates frequent repetition, and hence they soon pall.

Attention and Memory.

Darwin considered attention one of the most important of the human faculties for the development of the human understanding. With it must be associated memory, which depends on the disposition of our nerve cells to retain impressions made on them, and to reproduce them when required. Over-exertion of the brain necessitates prolonged rest; sleep, and something more, is required to restore mental activity. Observant teachers in our large public schools know full well that if there be excessive mental work, the effects cannot be immediately compensated by prolonged sleep—the remedy lies in diminishing the work, and in giving more time for recreation. Insufficient sleep from any cause in children practically amounts to overwork—a condition that diminishes the resistance to disease.

In fatigue of the brain one is conscious of a diminished mental grasp of a subject, and that an increased effort is necessary for mental work. There is also diminished capacity for attention, marked impairment of memory, and great difficulty in concentration of thought. To these may be added restlessness and irritability, and impairment of the sense of touch, and also diminished muscular power, although the muscles of the body may have been practically quiescent during the whole period of the overwork. The facial expression may also be altered.

Fatigue in School Life.

The effort of attention is the expression of a state of tension of the nerve cells of the brain. The act of attention is most tiring when a voluntary effort is made. Attention is correlated with expenditure of energy by the particular nerve cells affected. It is, therefore, extremely important that teachers should recognize how exhausting sustained attention is, especially in young children. The brain and the organs of sense soon become fatigued, and require frequent intervals for repose if the receptivity of the nerve cells is to be maintained. Not only is fatigue fatal to attention but, according to Ribot, it is equally fatal to memory. "The impressions received under such conditions are not fixed, and the reproduction of them is very laborious and often impossible. Fatigue is regarded as a state wherein, owing to the normal acting of an organ, the nutrition suffers and halts. When the normal conditions are restored memory comes back again."

Lombard has shown that the energy of nerve cells and muscles exhibit rhythmical variations in the course of the day. Both nerve cells and muscles are most energetic between 10 and 11 a.m. Therefore these periods should be selected for the lesson that is apt to cause most brain fatigue. The Germans have a proverb, "The morning hours have gold in the mouth." In schools much can also be done by changing the subject of study and so arranging the daily lessons that a subject like mathematics, which causes brain fatigue, should be followed by one of quite a different nature, such as drawing. Drawing and writing, which are apt to cause eye-strain, should not follow each other.

Many methods have been used to measure fatigue. One of the indirect methods is by means of the aesthesiometer, an instrument for determining the spatial sensibility of the skin, which is diminished in fatigue. The reaction-time method measures the time taken to react to a given signal, which becomes longer in fatigue. Others have employed dictation or arithmetical calculations or counting letters—that is, certain letters are struck out from a page of print. In fatigue the number struck out diminishes; others, again, employ memorizing.

It is well known that certain school subjects produce fatigue sooner than others. It has been attempted to obtain fatigue coefficients by means of the aesthesiometer (Wagner), and by the dynamometer. The following represents the order of subjects arranged according to difficulty:

Mathematics (standard)	100
Latin	91
Greek	90
Gymnastics	90
History and geography	85
French and German	82
Natural history	80
Drawing and religion	77

There is much to be said against home lessons, more especially when the conditions in many homes in which the young scholar has to work in the evening are remembered.

Fatigue in Relation to Digestion and the Kidneys.

Let us enlarge our view of fatigue a little, and take a wider and withal practical application of the subject. What does the question of "quick lunch" mean in this age of hurry and worry? It means over-stimulation of the digestive glands. Recent investigations have shown how intimately the quality of certain of the digestive fluids depend on the condition of the nervous system. The business man who has a quick lunch day after day wonders why he feels dyspeptic. He calls it indigestion, and flatters his soul that he has a touch of "liver," and that all will soon be well. Yes, so it would—if he would but act rationally. Glands, like muscles, suffer from fatigue. Even the tear glands of some lachrymose individuals require a rest.

The kidneys are, perhaps, the best-abused organs in the body. Some people stimulate them to activity morning, noon, and night—fatigue them, in fact. The kidneys are excited to activity chiefly by the chemical substances present in the blood, and the duty devolves upon them of excreting the waste products resulting from an unnecessarily large intake of nitrogenous food, a habit all too common.

Rhythm.

Bichat, at the beginning of the last century, spoke of the "tripod of life":

Brain.

Heart. Lungs.

Respiration or breathing is a more fundamental function than the circulation of the blood. All animals breathe, but not all animals have blood or a heart. The beating of the heart goes on before birth, and the cessation of its beat marks the cessation of life itself. How is it the body—a harp of thousand strings—keeps in tune so long? The secret is to be found in rhythm. Heart and diaphragm beat and contract rhythmically, and after each beat there comes a pause which permits of restitution of matter and energy, and gives time for the waste products to be removed, and thus leaves both muscles recuperated to begin a new beat. The heart rests, or is not in action, three-fourths of its time; the act of expiration is chiefly due to mechanical causes; inspiration is chiefly a muscular act. We must acknowledge the necessity as well as the universality of rhythm. What is sleep but the quiescent period of our nerve cells? It is more, for we say, with Macbeth, that it is chief nourisher in life's feast. The nerve cells, though resting, are storing up matter, and are being flushed and cleaned. Some folks indulge in what they are pleased to call a "spring cleaning." Well, our brain cells should have what corresponds to a spring cleaning every twenty-four hours.

Causes of Fatigue.

As to the causes of fatigue, the idea that the chemical substance in the muscle or in the blood (which are the sources of the chemical and thermal energy) are used up more rapidly than they are replaced is substantially true. That muscular fatigue is part of a chemical process is shown by the fact that if an extract made from the muscles of an animal that has been fatigued be injected into the muscles of a fresh animal, they show phenomena which cannot be distinguished from those of fatigue.

Professor A. Mosso showed that the blood of a fatigued animal contains toxic or poisonous substances. If the blood of a fatigued dog be injected into the blood vessels of a fresh, untired dog, the latter shows the symptoms of fatigue and changes in the heart-beat and breathing like those of fatigue.

If the blood vessels of a fatigued muscle be washed with oxygenated water containing a little common salt—a liquid which has no nutritive properties—the waste products are removed. Nothing that can yield energy to the muscles is added, yet the muscle regains its activity. Professor Kronecker showed experimentally that when a tired muscle is massaged to squeeze out the waste products it regains its activity. Massage was long ago practised by the Hindus, and the gladiators of ancient Rome had their muscles rubbed after the contests; the poisonous substances were thus quickly got rid of. Galen himself in the early part of his career was physician to the gladiators of his time.

Putting it broadly, then, the problem has a threefold aspect:

1. Using up of matter and energy. Restitution does not keep pace with waste. There is a run on capital.

2. Clogging of the machinery by the products of its own making, and the transference of these products by the blood to affect injuriously other organs.

3. The lack of oxygen. Thus both local and general effects must be studied. If fatigue be even in small part due to poisoning of the body, is it not obvious that from the employer's point of view he ought to strive to place his employee under the best conditions as to ventilation and other hygienic measures? In every case where this has been done both employers and workmen have been gainers. In Manchester in 1892 the firm of Mather and Platt adopted a forty-eight hours week. Sir William Mather, in commenting on the result, expressed the view that the most economical production is obtained by employing men only so long as they are at their best. When this stage is passed, there is no true economy in their continued work.

Repose.

All this makes it plain why repose is the necessary complement of fatigue. The idea conveyed by the word "repose" is to put things back in their places. I stand by the Jewish code, one day's rest in seven. By repose and restfulness I do not mean that as set forth by Tennyson in the choric song of the "mild-eyed melancholy" lotus eaters; rather would I put it in the words of Plutarch:

Rest is the sweet sauce of labour.

In addition to sleep—if it can be obtained naturally—the true rest of many a brain is to change to something less exciting, but at the same time useful occupation in which the sufferer gets interested. For many, something approaching manual labour in the open air is best. Not only is change of occupation important and beneficial, but change of scene also. What has been called the "magic of change" is more potent for good than any panaceas of the alchemists. Change is the very essence of life, for all manifestation of life is due to change—incessant and varying in degree—in the cells that compose our bodies.

For this of old is sure,
That change of toil is toil's sufficient cure.

TRAUMATIC INTRAMUSCULAR OSSIFICATION:

ITS PATHOLOGY AND TREATMENT BY EXCISION AND AUTOGENOUS GRAFTING OF FASCIA.

A CLINICAL AND EXPERIMENTAL STUDY.

[*With Special Plate.*]

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THE condition dealt with in this paper is usually known as myositis ossificans traumatica, but the name is objectionable as implying a theory of its pathology, for which, as I hope to show, there is little foundation. The condition to be described follows the infliction of a single severe contusion, and must be distinguished clearly from two other types of intramuscular ossification—namely, (1) myositis ossificans progressiva, which starts early in life, usually in the muscles of the back, and ultimately causes death from respiratory failure; and (2) ossification into tendons, the result of slight, repeated mechanical irritation, such as "rider's bone."

THEORIES OF CAUSATION.

After a severe, blunt, subcutaneous injury to a limb, usually the thigh or upper arm, a mass of bone develops in the contused muscles. Various theories have been entertained as to the origin and nature of this bony growth, a full discussion of which is given by Lapointe in a recent paper.[1]

Briefly, the theories fall into three main groups, namely:

1. Tumour formation.
2. Metaplastic inflammation of muscular connective tissue.
3. Mechanical.

1. *Tumour Formation.*—All authorities are agreed that traumatic intramuscular ossification is not of the nature of a malignant growth. It shows no tendency to infiltration of any tissue but muscle (if one excepts the ligaments when "ossifying periarthritis" occurs in addition), nor does it ever give rise to metastases. Only one case is recorded in the literature, by Coley,[2] of a sarcomatous change supervening on this condition. Nor can it be held that the bony mass is a true osteoma, or benign tumour, on account of its natural history. In the early stages the growth of bone into the damaged muscle suggests true tumour formation in that it is progressive and unrestrained by the laws that limit normal growth of bone, and to some extent mechanically injurious. But after several weeks or months not only does the growth cease, but a tendency to reabsorption is seen, which may in some cases go on to almost complete disappearance.

2. *Inflammation.*—According to some, the change set up in the muscle is an interstitial myositis with transformation into bone of the intramuscular fibrous tissue; that is to say, the growth is not derived from bone, and any attachment to bone is only secondary and accidental. Lapointe[1] gives his support to this view. He points out that while in some cases the bony growth is attached to the underlying bone, in others it is free from the bone, which may be found at operation to be completely covered by periosteum. Since both types of growth, free and attached to bone, are identical macroscopically and microscopically, Lapointe very properly insists that their manner of production is probably identical. His next inference, however, that the unattached bony masses cannot have originated in bone or periosteum and that therefore both types must arise by metaplasia of the intramuscular connective tissue, is unconvincing, since a temporary breach in the periosteum might allow of escape of osteoblasts. I do not contend that metaplasia of fibrous tissue into bone never occurs. In a case shown recently in Manchester by Professor G. A. Wright, a large plate of bone developed in the scar of an abdominal wound after gastro-enterostomy, and similar cases are reported in the literature (Lapointe). But I am unable to agree with Lapointe that, because in exceedingly rare cases such metaplasia may occur, therefore it must be invoked to explain the relatively common condition of traumatic intramuscular ossification. As I shall show, a simpler and more credible explanation is available. That the process is inflammatory, in the sense that it is a reaction of the tissues to injury, is obvious. There is, however, no evidence of any constitutional infection such as syphilis in these cases. The Wassermann reaction in the case reported below was negative.

3. *Mechanical.*—The truth of the mechanical view of its causation is suggested by certain facts concerning the incidence of the condition. Of a series of 233 cases collected from the records of the German Army in ten years by Schultz,[3] all but 3 were situated in the quadriceps or brachialis anticus The patients are usually young adult or adolescent males. The type of injury is always a severe subcutaneous contusion, and it is remarkable, on looking through the literature, how many cases are due to a kick on the front of the thigh or a blow with a fist on the front of the upper arm. Now in both these situations we have a broad, smooth, convex area of bone, covered by periosteum that is loosely attached and readily stripped off owing to the absence of tendinous insertions. This point has impressed many observers, and has given rise to the view that the lacerated muscle fibres may retract, carrying torn fragments of periosteum away from the bone, and that these fragments act as grafts producing bone. Others hold that as a result of trauma the cells of the deep layer of the periosteum are stimulated to proliferate. These views must be abandoned, however, since they are based on an erroneous conception of the function of the periosteum. The work of Macewen[4] has shown conclusively that the periosteum does not act as a bone producer, but as a limiting membrane to the growth of osteoblasts. Working on dogs, he showed that the so-called osteogenetic layer of the periosteum is really a subperiosteal layer of areolar tissue which normally contains osteoblasts in the growing bone only; that in healthy adult bone this subperiosteal areolar space contains few osteoblasts or none, so that transplanted periosteum does not produce bone; and that subperiosteal deposits of bone produced by irritation are due to the pouring out of osteoblasts into the subperiosteal space from the *deeper parts of the bone* via the Haversian canals.

In the light of these facts, and of the investigations I now record, I consider the pathology of traumatic intramuscular ossification to be as follows: A severe blunt injury at once subcutaneously strips off and destroys the periosteum, and crushes the muscles in contact with the bone. Bleeding occurs from the surface of the denuded bone, and, with the blood, osteoblasts in a free and possibly amoeboid condition escape into the pulped muscle tissue and blood, and there produce a growth of bone. As Macewen has shown, healthy muscles left in contact with denuded bone form protective fibrous adhesions from their interstitial connective tissue, and so take on the limiting function of the periosteum. My own investigations show that severely contused muscle tissue mixed with blood, so far from restraining the migration and growth of osteoblasts, provides a very favourable pabulum for them.

CASE.

The following case affords a clear demonstration of the truth of these views:

A strong, healthy young man, aged 20, a greengrocer's assistant, was admitted to the Ancoats Hospital, Manchester, under my care on January 2nd, 1913, complaining of sudden swelling of the left thigh. He gave the following history. On December 11th, 1912, three weeks before admission, he was thrown out of a cart which he was driving, and the wheel ran over the front of his left thigh. There was a good deal of bruising, for which he massaged it, and he was off work for three days. He then returned to work, and noticed nothing wrong but slight difficulty in flexing the knee, and pain on attempting to do so. On the evening before admission, while sitting down at home, he bent his knee a little more than usual and felt a sudden pain in front of the lower third of the thigh. Almost immediately he noticed that the thigh was swelling, and he felt with the swelling a "buzzing sensation" in his muscles. In a few minutes the thigh had swelled up very considerably, and felt distended. His friends made matters worse meanwhile by vigorous massage. Early next morning he came to hospital.

On Admission.—The left thigh was greatly swollen, chiefly on the antero-lateral aspect of the femur about its centre. On palpation the swelling was only slightly tender. It was partly fluctuant, but gave a sense of the presence of a solid element as well as fluid. It was obviously a case of spontaneous haematoma under the quadriceps, and naturally gave rise to the

suspicion of sarcoma resulting from the trauma. A skiagram taken the same day by Dr. Bythell showed "a faint subperiosteal deposit of bone, irregular in shape, that might be due to a periosteal sarcoma." The Wassermann reaction, tested by Dr. Arnold Renshaw, was negative. It was decided to explore in order to establish the diagnosis. Accordingly on January 3rd, the day after admission, under ether anaesthesia, an incision 8 in. long was made on the front and outer aspect of the thigh. The rectus femoris and vastus externus having been separated, a large haematoma was evacuated lying under and in the crureus muscle. At the bottom of the cavity of the haematoma was the femur, covered by an irregular layer of new bony growth, about 2 cm. thick on the average. Blunt spikes and bars of bone were projecting into the surrounding muscular tissue and into the cavity of the haematoma in an irregular manner, and two or three bars of similar hard material were felt on the outer (superficial) aspect of the haematoma cavity, widely separated from the rest and embedded in muscle tissue. The new bone was soft and easily gouged away, and presented just the appearance of three weeks old callus. The surface of the mass where it projected into the haematoma cavity was smooth and covered by what appeared to be embryonic or myxomatous connective tissue. The case was plainly one of intramuscular ossification, and not malignant. Accordingly I gouged out the mass as completely as possible. It covered an area on the front of the femur roughly 8 × 4 cm. When the soft young spongy bone was removed the underlying compact bone of the shaft of the femur was left smooth and of normal appearance, but there was no trace of periosteum between femur and new bone. I also removed the bars of bone felt in the muscle on the superficial aspect of the blood cavity, for microscopical examination, taking care to excise some of the adherent muscle with them. The wound was then sutured, and the patient put to bed with the leg bandaged in extension. Healing was by first intention, and he left the hospital ten days later with no swelling of the thigh, but slight limitation of flexion of the knee, and was instructed to attend as an out-patient.

The limitation of flexion became gradually worse during the next month, and he complained of inability to walk up steps in consequence, and a tendency to fall down owing to his toe catching. Examined three weeks after the operation a distinct, irregular, hard swelling in the same position as before was apparent. A radiogram showed a definite recurrence a good deal larger in extent than at the first operation. No pain was felt, but he could not flex the left knee to a right angle, and asked for further operation, since he would be quite unable to get up into his cart in this condition.

As expectant treatment offered the prospect under the most favourable circumstances of months of inability to work, and possibly of permanent limitation of flexion, and since I had now come to the conclusion that the cause of the recurrence was the destruction of periosteum and loss of its function as a limiting membrane for the osteoblasts, I considered how best that function might be replaced. Staige Davis[5] has shown experimentally in dogs the feasibility of transplanting layers of fascia or aponeurosis to remedy defects in the abdominal wall, skull, and in a wide variety of situations. Accordingly I decided to remove the recurrent bone, and perform an autogenous transplantation of fascia on to the denuded bone, and to use for this purpose a piece of the patient's ilio-tibial band. This I hoped would fulfil the double function of preventing further recurrence, and preventing adhesions of muscle to the denuded bone.

The patient was readmitted on February 20th, 1913, seven weeks after the first operation. The last skiagram, taken on February 11th, had shown a slight further extension of the growth. An incision to the outer side of the former one was made, slightly curved outwards, and a flap of skin and subcutaneous tissue raised, leaving the ilio-tibial band exposed. The fascia was incised, the muscles separated, and the new bone growing in the crureus thoroughly excised, leaving the femur bare. A piece of ilio-tibial band and fascia lata at least 10 by 5 cm. in size, was then cut out, care being taken not to divide the whole width of the band, lest the muscles inserted into it should be weakened. It was placed on the denuded bone with the outer, subcutaneous surface next to the bone, and the inner surface, less calculated, as I considered, to form adhesions, in contact with the muscle. In this position it was fixed by six sutures of fine catgut, so as completely to cover the denuded area. The wound was then closed, and the limb put up in flexion on a double inclined plane.

Healing was by first intention. Movement was commenced after the first two days. There was a little weakness of the quadriceps at first, owing to slight injury to some of its motor fibres, but at the end of three weeks this had recovered. A month after operation there was full flexion at the knee, and the patient could walk and perform all movements without the least inconvenience. Skiagrams taken four and eight weeks after operation showed complete freedom from recurrence.

Experimental Confirmation.

By the kindness of Professor Boycott I have been able to perform experiments on rabbits in the pathological laboratories of Manchester University. These investigations are not yet complete, and will form the subject of a subsequent communication. It may be stated as a preliminary report, however, that intramuscular ossification essentially similar to the condition that occurs in man may be produced by curetting off the periosteum from the front of a rabbit's femur, and crushing the adjacent muscles. Ossification occurs by the migration of osteoblasts into the crushed muscles and blood clots lying in contact with the denuded bone. A specimen produced in this way in a rabbit is shown in Fig. 6, with a normal bone for comparison. The corresponding skiagram is shown in Fig. 7, and a microscopic preparation from another rabbit in Fig. 4. That devitalization of the muscles by crushing is an essential factor is shown by the fact that when the periosteum is removed, and the muscles are not crushed, little, if any, exuberant growth of bone occurs. This fact agrees with the observations of Macewen.

Histology.

For microscopical examination a bar of bone, some 3 cm. long, removed at the first operation, was chosen. It was cylindrical in shape, with a diameter of 0.5 cm. at its widest part, and was almost completely surrounded by fibres of the muscle, in which it was growing parallel to their long axis. This piece of bone was decalcified, and transverse and longitudinal sections cut and stained with haematoxylin and eosin (Figs. 1, 2, and 3).

Transverse sections (Figs. 1 and 2) show a definite formation of spongy bone arranged in irregular trabeculae, with large vascular medullary spaces between, in which a few multi-nucleated cells and many oval cells of embryonic connective tissue type are seen. The osseous matrix takes on a definite pink with the eosin. In the centre of the bone is an area of hyaline cartilage, avascular, and merging into bone at its periphery. The cartilage is distinguished from the osseous tissue by the non-staining character of its hyaline matrix, by large cell spaces, and round nuclei, faintly stained with blue. It appears to be undergoing rapid cell division. The periphery of the bony mass is nowhere in immediate contact with muscle fibres, but is surrounded by and merges into a layer of primitive fibrous tissue containing many oval nuclei. It is evident that these embryonic connective tissue cells are actively infiltrating the muscle and destroying its fibres. Here and there isolated and degenerate muscle fibres are seen surrounded by this tissue, and a little further from the bone it is seen to be invading the muscle substance by infiltration between its fibres. There is a general increase of the intramuscular fibrous tissue.

Longitudinal sections show particularly well this process of infiltration and destruction of muscle tissue by these indifferent connective tissue cells (Fig. 3).

Interpretation.

The first point of interest is the nature and origin of the cells that are infiltrating the muscle fibres and paving the way for the growth of true bone. Do they originate in the intramuscular connective tissue or in bone? A minute

DESCRIPTION OF SPECIAL PLATE.

Fig. 1.—Traumatic intramuscular ossification of three weeks' growth in man. From case described in text. Transverse section. B=Bone, C=hyaline cartilage, M=muscle, P=preosseous tissue (⅔ in. objective).

Fig. 2. Same under high power (⅙ in.), showing transition from bone into cartilage.

Fig. 3.—Same in longitudinal section, showing infiltration of muscle fibres by preosseous tissue (⅔ in. objective).

Fig. 4.—Section of traumatic intramuscular ossification of four weeks' growth produced experimentally in rabbit, showing infiltration of muscle (M) by preosseous tissue (P); similar to Fig. 3.

Fig. 5.—Old-standing traumatic "myositis ossificans," showing incomplete reabsorption and transformation into dense bone. (Museum specimen.)

Fig. 6.—Traumatic intramuscular ossification produced experimentally in rabbit. Normal femur of rabbit for comparison.

Fig. 7.—Radiogram of specimens shown in Fig. 6.

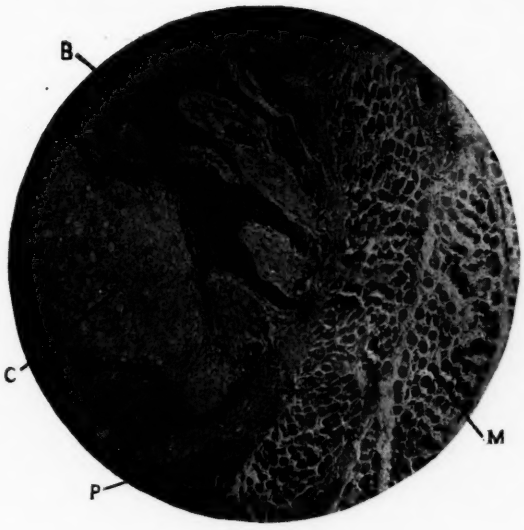

FIG. 1.

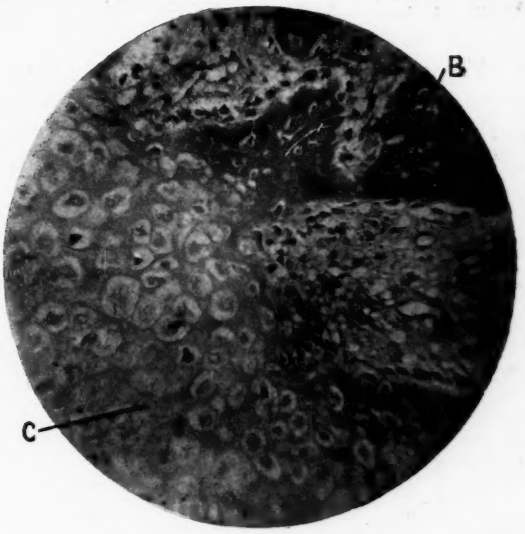

FIG. 2.

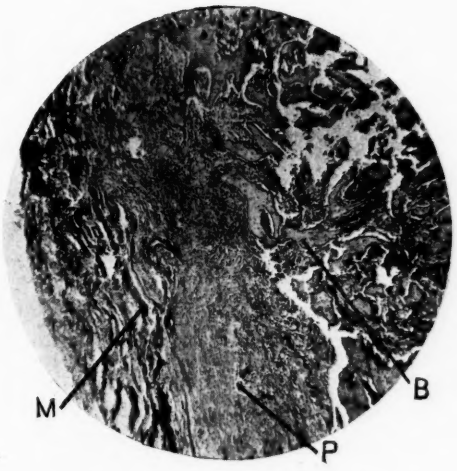

FIG. 4.

FIG. 3.

FIG. 5.

FIG. 6.

FIG. 7.

examination of a number of these sections under a high power lens convinces me that they are simply osteoblasts in an actively dividing preosseous stage. The outer margin of the definite bony tissue passes by insensible degrees into this embryonic fibrous tissue, which here and there takes on faintly the pink stain seen in the fully developed osseous matrix. Similarly cells can everywhere be seen in every stage of transition between the mature osteoblast and these indifferent connective tissue cells. This conclusion is, of course, supported by the experimental evidence given above.

The sections show further in a striking manner that the cartilage cells are also identical with the osteoblasts, though in a different matrix, for between these again all stages of transition are seen. The importance of this conception of the essential unity of the osteoblast and chondroblast is obvious in connexion with our ideas on the growth of bone. There is now a very general feeling of scepticism towards the classical description of ossification in cartilage. Macewen holds that the osteoblast and chondroblast are the same cell in different guise. Wingate Todd,[6] as the result of extensive histological investigations, concludes that "osteoblasts are fibroblasts or connective tissue cells which have undergone certain characteristic modifications, and may or may not have passed through a chondroblast stage." With these authorities I am in entire agreement. The explanation of the presence of cartilage here is not so simple. The cartilage plainly originated from bone, and would probably have been transformed in course of time into bony tissue. I am inclined to think that the presence of cartilage in the centre of the bar of bone is to be explained by its lower vascularity, since we know that an essential difference between bone and cartilage is that the former is vascular, the latter avascular.

Differential Diagnosis.

One condition only is likely to give rise to serious trouble in diagnosis, and that is sarcoma. In my own case the spontaneous haemorrhage occurring three weeks after the causal injury (so far as I know a unique complication) gave rise to the suspicion of sarcoma. More commonly it is the bony swelling that first arouses this suspicion, and there is no doubt that before the simple nature of "myositis ossificans" was generally recognized many limbs were needlessly sacrificed by this error in diagnosis. A careful *x*-ray examination, and if there is the least doubt exploration by open operation, should be undertaken in every case. A recent paper by Coley[2] deals very fully with this difficulty in diagnosis.

Prognosis and Treatment.

The extent to which the bony mass will grow, apart from treatment, cannot be predicted with any accuracy, though it doubtless bears some relation to the severity of the injury to muscles and the area of bone denuded. In some cases recorded almost the whole quadriceps, or brachialis anticus, has been infiltrated with bone. Most observers have noticed a natural tendency to cessation of growth after some months, and a variable degree of reabsorption. That this reabsorption is not always complete is shown by an *x*-ray plate of Coley's taken five years after the onset, and by two specimens in the pathological museum of Manchester University that are obviously of very old standing (Fig. 5). In these specimens the partial reabsorption has been accompanied by a condensation of the outer layer of the new-formed bone into very dense, compact tissue. The degree of disability produced depends on the mechanical embarrassment of muscles and joints. By reabsorption of bone and stretching of muscles with exercise this disability will tend slowly to improve. Ultimately, in many cases, perfect function will be restored, though this will take many months, as a rule, and may take years. There is also no doubt that simple excision is followed as a rule, though not invariably (Lapointe) by recurrence.

The tendency of late years has been towards conservative treatment. Robert Jones, who formerly advocated excision, has latterly[7] advised an expectant course in view of the disappointing results of operation. Makins and others, at the discussion in 1911 before the Royal Society of Medicine,[8] also advocated conservative treatment. Lapointe admits the frequency of recurrence, but considers that excision is worth trying.

The main purpose of this paper is to advocate excision with grafting of a stout layer of deep fascia or aponeurosis on to the denuded bone. As stated above, the result in my own case was a complete success, and has saved the patient at the least many months of incapacity for work. In the case of the femur the fascia is most conveniently taken from the ilio-tibial band, taking care not to divide that structure completely, lest weakness of the gluteus maximus and tensor fasciae femoris, and, through them, of the knee-joint, should result. In the upper arm a strip of the investing layer of deep fascia would prove sufficiently tough to act as a limiting membrane. It is not enough simply to lay the fascia on the denuded bone, as it would crumple up. It must be sutured in place by a few catgut stitches passed on a curved needle through the neighbouring periosteum and muscular tissue. Early movement is advisable to aid in the prevention of adhesions. Extremely scrupulous aseptic precautions are necessary.

I am greatly indebted to Professor Boycott for allowing me to carry out the experimental work in the Manchester University Pathological Department, and to Drs. Bythell and Barclay for producing the radiograms.

Conclusions.

1. Traumatic intramuscular ossification ("myositis ossificans") is due to migration of osteoblasts into adjacent contused muscle and blood clot, after destruction of the periosteum and loss of its function as limiting membrane to the growth of bone. It is essentially the same process as callus formation.
2. The condition may be produced experimentally in animals by reproducing the same mechanical conditions by an aseptic open operation.
3. In a case of difficulty in diagnosis from sarcoma open exploration is advisable.
4. Simple excision is usually, though not invariably, followed by recurrence.
5. Conservative treatment condemns the patient to a long period of disability, which may occasionally be permanent.
6. Excision combined with grafting of deep fascia on to the denuded surface of bone gives the best prospect of rapid and complete recovery, and is urged for all cases not complicated by ossifying periarthritis.
7. Osteoblasts and chondroblasts are the same cells under different conditions of nutrition.

References.

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THE usual monthly meeting of the executive committee of the Medical Sickness and Accident Society took place on November 21st at 429, Strand, W.C., Dr. F. J. Allan in the chair. The claim account showed a decided reduction, and was not above the expectation. New business was well above the number for the corresponding month in preceding years. The increasing interest taken by the profession in the society and the many inquiries received at the head office in Chancery Lane prove that the solid business basis on which it is conducted and the fairness with which claims are met is much appreciated. For thirty years now the society has steadily progressed, and from quite a small concern has gradually developed into one of some prominence in the insurance world, with invested reserves of over £260,000. The committee at this meeting discussed some changes of the rules which are to be submitted to the members at the annual meeting next year. It has been thought advisable to give greater facilities for dealing with sundry matters which arise from time to time. The basis of the quinquennial valuation was approved, and it was resolved that this should be carried out by the actuary to the society as before. It is confidently hoped that the bonuses paid to members insured for sickness benefit on their attaining age 65 may be maintained during the next quinquennium. Prospectus and all further information may be had on application to the Secretary, Mr. Bertram Sutton, 33, Chancery Lane, W.C.

A Post-Graduate Lecture

ON

THE OPERATIVE TREATMENT OF HAEMORRHOIDS.

Delivered at St. Mark's Hospital, 1913.

BY

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Time will not permit me to enter into a description of all the operative measures invented for the removal of haemorrhoids, but I intend to discuss the three operations in common use at this hospital—the ligature operation, the clamp and cautery, and the operation of excision of the pile-bearing area of mucous membrane, familiarly known as the Whitehead method. All these methods have their uses and give excellent results, but success in this department of rectal surgery depends on the ability of the surgeon to select the most suitable method for the individual case of haemorrhoids which he is about to treat. Happily the old dictum of "one surgeon, one method," is quickly disappearing. Cases of haemorrhoids may vary so much from one another that it is better not to decide on any particular method of operation until the sphincters have been stretched and then to choose the method most suitable for the pathological condition presented.

This brings us to the question, How do cases of piles vary one from the other? What pathological varieties are met with? And how do they affect the selection of a particular method of operation?

There is the question of size. They may vary from the small internal variety with, perhaps, quite alarming symptoms of haemorrhage up to the large prolapsing kind that may be extremely difficult for the patient to reduce. There is the important question of number: one large pile only may be present, usually an anterior one, or there may be two lateral piles, more commonly there are three—one antero-lateral and two postero-lateral. Sometimes smaller piles are interposed between these three, bringing the number up to four, five, or six. Lastly, there may be a regular ring or rosette of piles, as in this specimen which I show you. Vascularity is another important condition which must be taken into consideration. Some haemorrhoids may be extremely vascular, bleed very easily, and rapidly cause the patient to become anaemic; others, again, which have been subject to slow, irritative, inflammatory changes, become fibrous, avascular, and sometimes adherent. Extensive thrombosis occurs in some cases, the whole of the haemorrhoidal area being filled with little black thrombi. Internal piles may be accompanied by external piles which are varices covered by skin. These latter may be single, multiple, small or large, thrombotic, ulcerated, inflamed or oedematous.

The internal piles themselves may be inflamed, ulcerated, or prolapsed and strangulated. Another point that must be noted is the condition of the sphincter. On the one hand, this muscular collar may be very powerful and difficult to stretch, or it may be very weak and inactive, having been stretched daily from above, perhaps for many years, by the prolapsing piles themselves.

Other ano-rectal conditions may be present complicating haemorrhoids, such as a dorsal fissure, a fistula, a simple polypus or benign tumour, a non malignant stricture, or even carcinoma.

Apart from these local conditions we may find grave visceral disease, cardiac or liver. Severe anaemia may be present. Pregnancy may be present. Again, the individual must be considered. The patient may be a busy business man or a sailor who must rejoin his ship soon, and then we must adopt the method which is likely to allow either the quickest return to duty. Great fear of pain in some cases will cause us to adopt the least painful method. Should the patient be one who may not be easily seen after the operation, a method must be employed which will leave no chance of subsequent stenosis.

When should operative treatment be advised in cases of haemorrhoids? If prolapse and haemorrhage still continue after regulation of the bowels then operation should be advised. Grave visceral lesions—for example, cardiac or liver disease—contraindicate operation; so also does carcinoma of the sigmoid or rectum.

Should operation be advised during pregnancy? Not as a rule, because the haemorrhoidal condition is due to the pressure of the gravid uterus, and when this is relieved after delivery the haemorrhage and prolapse, as a rule, subside. In some cases the haemorrhage may be so severe a drain on the mother that an operation must be done, but the risk of producing premature labour must always be remembered.

When a case of irreducible oedematous and strangulated haemorrhoids presents itself what are you to advise? The condition is an extremely painful one, and is best treated by immediate operation.

Preparation for Operation.

The treatment before operation is very important. The teeth must be put in good condition and any pyorrhoea alveolaris checked. Vaginal discharge must be treated and all other septic foci put right. Two nights before the operation an ounce of castor oil is given, which produces a good action of the bowels next day. The evening before the operation an enema is given, followed by others next morning till the return is clear. No enema should be given within four hours of the operation. Catechu and opium mixture is given the evening before the operation to check the action of the bowel and prevent material coming from above.

It is best to operate in the lithotomy position, and, after the sphincters are stretched, the skin and rectum are cleansed with soap and water, followed by biniodide solution, and, lastly, iodine.

Operations.

1. The ligature method was invented by Salmon, the founder of this hospital, whose portrait hangs in this room. This is the most generally used and most applicable of all the methods in the treatment of piles. Each pile is held by pressure forceps and drawn downwards, and at the external circumference of the pile base a cut is made with strong, straight scissors. The cut is made parallel to the long axis of the bowel, and deepened until a fairly thin pedicle with the entering vessels is left. This pedicle is tied securely with a No. 8 plaited silk ligature, and then half of the separated pile cut away below the ligature. The other piles are treated similarly, all external tags removed, and when the haemorrhage has been arrested, a small $\frac{1}{8}$ in. rubber tube 4 in. long is inserted and dressings applied. The tube allows flatus to escape, reveals recurrent haemorrhage, exerts pressure on the oozing surfaces, and can be used later for injecting olive oil into the bowel. Various modifications of this operation may be used, such as the removal of the internal and external haemorrhoid in the one cut, or the pedicle may be sutured to the skin margin; the pile itself may be simply transfixed and ligatured in two halves without any cutting, or it may be clamped, and the base sewn over, and then the pile removed.

2. The clamp and cautery operation had a powerful advocate in Henry Smith in this country and is performed as follows: Each pile is caught by pressure forceps and a clamp applied to its base in the long axis of the bowel. The clamps we use here are those devised by Gowlland which have the special advantages that they are small, easily manipulated, three can be applied at the one time, and the greatest pressure is exerted at the top where the vessels enter the pile. After the pile is clamped it is cut off with scissors and the stump is seared by means of the cautery. The clamps are left on for at least five minutes after cauterization, and this I consider a very important point in the technique. They are then opened slowly and removed very gently so as not to disturb the eschars. Vaseline is inserted and then a pile tube as before.

3. In the Whitehead method the sphincters are very gently stretched and an incision made all round the mucocutaneous junction. The dissection is carried up by means of scissors and dissecting forceps until a cuff is formed of the pile-bearing area of mucosa. The lower part of the sphincter collar is exposed in this dissection. The loosened cuff is now removed and the cut edge of mucous

membrane brought down and stretched to the skin margin. No tube is required in this operation, but simple dressings are applied.

The after-treatment is most important, and is much the same in the three methods described. Light foods are given till the fourth day, when 4 oz. of sterilized olive oil are injected slowly through the rectal tube. The tube is then removed, and an aperient given by the mouth—namely, 1 oz. of castor oil.

The olive oil prevents pain during the first defaecation, after which a boracic wash-out is given and the wound dressed. After the end of the first week the patient is allowed up to sit in a hot bath for ten minutes daily till the end of the third week. Digital examination is carried out three times a week after the first week to guard against any tendency to contraction. Pain the night after the operation is relieved by morphine given hypodermically, and the catheter is used next day should retention of urine occur.

The healing of the wounds varies slightly in the different methods. In the ligature method during the first week three triangular wounds with the bases downwards are felt with the ligature knots above, and more or less slough of the ligated piles lying in the anal canal. The ligatures separate from the seventh to the twelfth day, and the wounds gradually close in. During the third and fourth weeks the wounds feel smoother and more linear, and then there may be noticed a little tendency to stenosis, especially if in the operation the piles were all ligated at the one level and broad pedicles made. After this operation troublesome tags may form, but at the end of six weeks these have usually subsided or been removed, and the anal canal at this period should feel fairly smooth, the wounds having perfectly healed.

During the first week after the clamp and cautery method three soft linear ridges are felt in the ano-rectum. The edges usually separate a little, but gradually close in, and four to six weeks after the operation three soft linear scars are felt, and in some cases the anal canal is so smooth that it would be difficult to tell that an operation had been performed. Large external tags may develop after this operation more than after the other methods. Stenosis never occurs after this operation, and if properly done there should be no fear of recurrent haemorrhage.

After the Whitehead method the stitches usually give way about the fourth day, and the cuff of mucosa retracts from the anal margin for a distance varying from ¼ in. to 1 in. No case ever heals by first intention. The ring of granulation tissue gradually contracts, and during the third, fourth, and fifth weeks digital examination and dilatation must be carried out to prevent stenosis. This cicatricial ring, if properly stretched when the fibrous tissue is still young, shows no further tendency to contract after the sixth to eighth week. At this time the scar of operation should feel quite smooth, or at most a fine fibrous annular thread is felt at the junction of skin and mucous membrane.

The average duration of treatment in hospital is for the ligature cases twenty-one days, clamp and cautery cases ten days, Whitehead cases twenty-six days.

In a paper I published in the JOURNAL on October 30th, 1909, I gave the after-results of 300 operations for haemorrhoids, and since that time I have collected further results which with slight variations confirm the original paper. They prove that the clamp and cautery is the least painful method, the ligature the most painful, and the Whitehead intermediate.

The catheter is most often required after the ligature, least after the clamp and cautery, and the Whitehead method again takes an intermediate position.

Sphincteric control returns quickest after the clamp and cautery method, usually about the sixth day. In the ligature cases control returns about the tenth, and after the Whitehead it varies from fourteen to twenty days.

Stenosis never occurs after clamp and cautery. In about 30 per cent. of ligature cases there is a slight tendency to contract. After the Whitehead method about 56 per cent. show tendency to contraction. In about 8 per cent. there may be more marked contraction which requires careful after-treatment and digital dilatation.

Tags, which may be a very troublesome complication after operation, develop most frequently after the clamp and cautery method, least after the Whitehead method, and the ligature here takes the intermediate position.

Recurrent haemorrhage is more likely to occur after the ligature method than after the other two methods.

Sepsis in the form of abscess, fistula, or post-operative ulceration rarely occurs after the clamp and cautery have been used. In this operation no foreign bodies are left in the rectum, no sutures used. Septic troubles may occur equally after the ligature or Whitehead method.

With regard to the choice of method, I repeat that this should not be decided on until the sphincters are stretched and the haemorrhoidal condition viewed. The ligature method is the most generally applicable, and is very easily and quickly performed. It is especially suited for cases of three, four, or five piles, especially of the mixed variety, when the external and internal piles can be removed at the one time. Very little blood is lost during the operation, and the after-pain can be controlled by morphine, whilst tag formation usually subsides later; or, if they are large, they can be removed under local anaesthesia later. This method is the one to employ if any complication, such as fissure or fistula, be present. A patient can usually return to work six to eight weeks after the operation.

The clamp or cautery operation is certainly the least painful; there is never any fear of stenosis afterwards, and if properly performed there should be no danger of recurrent haemorrhage. It is not suitable when external piles are present as well, or when a fissure or fistula complicates the case. It is especially suitable for cases of not more than three piles of the internal variety, and when there is no redundant anal skin or tags present. It is a bloodless method, and suitable for very anaemic cases, and as it is the least painful method, it should be chosen for patients of a very nervous temperament. If time is an important question, this method should be used, as the period of convalescence is considerably shortened. If the surgeon should be unable to see his patient again, he need have no fear of subsequent stenosis after the clamp and cautery method.

The Whitehead method should be reserved for the following cases:

(*a*) Where there is a general haemorrhoidal condition involving the whole circumference of the ano-rectum, and especially if there is extensive thrombosis or a considerable extent of prolapse.

(*b*) In cases where, though the piles may not be large, there is a pathological condition present which may be described as a prefissure or prefistula state. In this condition the anal valves are enlarged, and little blind submucous pockets may be found running upwards or downwards from the line of anal valves. These may have their mouths occluded and act like little incubating chambers, and are undoubtedly in many cases the starting point of fistula; whilst, if Ball's theory be accepted, enlarged anal valves lend themselves to the formation of fissure.

Whitehead's method removes this danger zone as well as the haemorrhoids.

This method should not be employed in all cases of haemorrhoids, but is well suited for the condition mentioned above. If the after-treatment is properly carried out, stenosis should not occur.

UNDER the will of the late Mr. George Palmer, senior partner of the firm of Messrs. Huntley and Palmer, the Royal Berkshire Hospital receives a bequest of £5,000; while Reading Dispensary and the Children's Cottage Hospital at Cold Ash, near Newbury, each receive £500.

AMONG the newly elected members of the Italian Chamber of Deputies we note the names of Professor Guido Baccelli (Rome), Professor R. Rampoldi (Pavia), Professor R. Sanarelli (Bibbiena), Professor R. Santoliquido (Acerenza), Professor T. Morisani (Piedmonte d'Alife), and Professor G. B. Queirolo (Pisa).

THE St. Christopher's Working Boys' Club in Fitzroy Square, which has lately been closed for repairs, was reopened on November 20th, and was visited by a large number of persons interested in its work. The club rooms, which have been entirely redecorated and restored, include a library and several comfortable lounges and billiard rooms. The club forms a much-needed refuge for working boys of all ages whose only amusements would otherwise be found in the streets.

RHEUMATIC NODULES (RHEUMATISMUS NODOSUS) ASSOCIATED WITH RHEUMATIC TORTICOLLIS.

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THE connexion of rheumatic nodules with rheumatic polyarthritis and Sydenham's chorea has, of course, long been recognized. Barlow and Warner, at the International Medical Congress at London in 1881, read a paper on subcutaneous nodules connected with fibrous structures occurring in children the subjects of rheumatism and chorea;[1] it was based on 27 cases collected by themselves. H. Rabinowitsch, in an inaugural dissertation at Berlin in 1889,[2] collected accounts of 52 cases, of which 44 were under the age of 20. If the German term *rheumatismus nodosus* (nodular rheumatism) be employed for this variety of rheumatism, it must, of course, not be

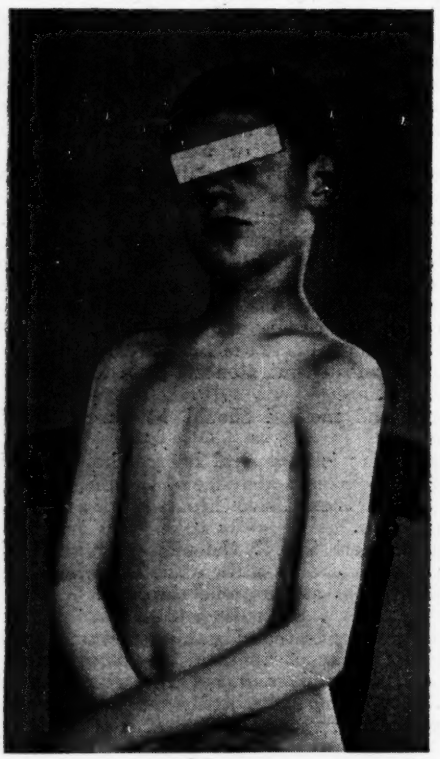

Fig. 1.—To show the wry-neck.

confused with the French *rhumatisme noueux*, which is a synonym for arthritis deformans. True rheumatic nodules are termed by the French *nodosités rhumatismales sous-cutanées*.[3]

One of the most elaborate and recent papers on the subject is that by Rosa Berkowitz in 1912,[4] who based her conclusions on some personal observations and a large collection of cases from the literature. According to her statistics cardiac complications (endocarditis, endopericarditis) are present in at least 88 per cent. of cases of nodular rheumatism in children. In all probability the present case is no exception to the rule that endocarditis generally accompanies rheumatic nodules, though the auscultatory signs are not quite decisive. The case conforms to the rule that the subjects of true rheumatic nodules are generally children who have passed through an acute or subacute rheumatic infection without being completely cured. The special interest in the case is, however, the association of the nodules with rheumatic torticollis, an association which one would expect to be not so very infrequent, but which seems as yet to be unrecorded in the literature of the subject.

F. W.,* aged 11 years, is a pale, rather delicate-looking boy, with a certain degree of wry-neck, the neck being bent towards the patient's right with the chin turned a little to the left (see Fig. 1, from a photograph taken on October 19th). At present (November 1st, 1913) there is no arthritis, nor does the boy complain of any pain or tenderness anywhere, but there is some puffiness about the second and third metacarpo-phalangeal joints in both hands, and over these joints very small rheumatic nodules can be seen and felt. There are moderate-sized rheumatic nodules over both elbows and both knees (patellae), those over the knees being the largest and the most numerous. The olecranon bursa at both elbows is enlarged. The heart is excitable in action, and the impurity of the first sound at the apex suggests slight endocardial changes at the mitral valve. In the absence of fever the frequency as well as the excitability of the heart's action suggest slight myocardial implication. There is likewise a variable systolic murmur to be heard over the "pulmonary area." Some of the lymphatic glands in the neck are a little enlarged.

The history is that the boy enjoyed good health until the present illness commenced on September 13th, 1913, with pain in the left ankle; this joint became swollen on the following day. There was never any tonsillitis. He was treated by rest in bed and small doses of salicylates. At first there was fever up to between 102° F. and 103° F. This left him on September 20th, but after September 24th to the middle of October there were occasional evening rises of temperature to about 100° F. Since then there has been no fever.

The wry-neck appeared at the end of September, and was at first accompanied by a little pain at the lower posterior part of the right side of the neck. The rheumatic nodules were first noticed in the middle of October, at first only on the elbows and knees, later over the hands also. Recently he has been treated with subcutaneous injections of "rheumatism phylacogen" (Parke, Davis, and Co.), and with careful massage of the neck. Roentgen-ray examination (skiagrams), about the middle of October, and again about the middle of November, showed no bony change in the neck. The bony prominence felt on the left side of the neck just below the mastoid region is evidently due merely to the wry-neck position of the cervical vertebrae.

When the case was shown on November 14th the rheumatic

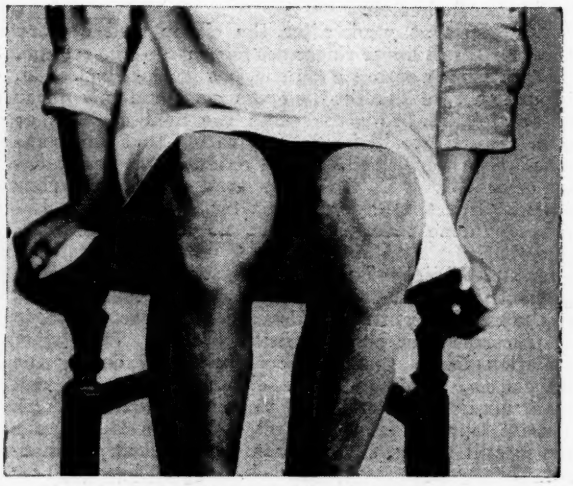

Fig. 2.—To show the rheumatic nodules on the knees.

nodules on the elbows and hands had become less marked, but those on the knees had, if anything, increased (Fig. 2). The wry-neck had not disappeared entirely. The phylacogen treatment had been accompanied by occasional very slight febrile reaction.

The boy's father died five years ago from pulmonary tuberculosis at the age of 39, and the mother, aged 45, is living and well. Their four children are all living and the patient is the only one of them who is not well.

Similar "rheumatic torticollis," occurring after a mild attack of acute rheumatism, has not rarely been diagnosed as due to tuberculous caries of cervical vertebrae, and treated accordingly.

Perhaps a true periarthritic rheumatic fibrositis, analogous to the fibrositis which produces the rheumatic nodules, is the cause of the torticollis, which in the present case has not ceased during sleep, has not been intermittent, and has not been associated with any clonic or other spasm.

It is interesting that in 1878 H. Rehn[5] ended his summary of the local manifestations of acute rheumatism with a description of rheumatic wry-neck, and the first two published cases of rheumatic nodules (P. Meynet's of 1875 and one observed by himself). I have not thought it advisable to remove any of the nodules for histological examination. There seem to be quite sufficient observations of the kind on record, and the anatomical patho-

* The patient was shown by Dr. Weber at the Clinical Section of the Royal Society of Medicine on November 14th, 1913

logical findings have been quite recently dealt with in an excellent paper by Paul Frank.[6]

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THE DAILY WEIGHT CHART AS A GUIDE TO TUBERCULIN.

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ONE of the greatest problems in vaccine treatment is the dosage of tuberculin. How are the size of the dose and the interval to be regulated? There are various methods, divisible roughly into two groups: (1) By clinical observation, coupled with experience; (2) by serological tests. Neither of these is entirely satisfactory. The former because the experience required is beyond the reach of most of us, and no amount of experience will tell infallibly what interval is the best; frequently, too, clinical observations are of no assistance, since there may be no clinical facts to observe; the temperature may be unaltered, the pulse-rate unaffected, the focus of disease too deep for changes in physical signs to be detected. How, then, is one to know at what interval to give the next dose? In the result one has to chance it. On the other hand, serological tests in phthisis, at any rate, are useless as a guide to therapy unless frequently repeated, and this I take it to be, for the majority, outside the range of practical treatment.

The object of this communication is to bring forward a method which is as nearly an infallible guide to correct tuberculin treatment as we are ever likely to obtain, and which happily is so simple that there is no case to which it cannot be applied.

If a chart is kept on which the weight, taken daily at the same hour and in the same garments, is recorded, fluctuations will be found to occur. These are not confined to small differences of an ounce or two, but from half to as much as two pounds may be noted between succeeding days.

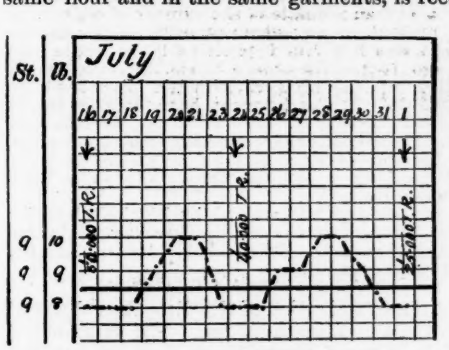

Chart 1.—Showing fluctuations induced by two small doses of tuberculin in a case of early phthisis.

On comparing weight charts of cases controlled by this method over a period of some two years or more, I have found that the weight curves, following a dose of tuberculin, fall naturally into the following groups (Chart 2). (Each perpendicular indicates an interval of twenty-four hours.)

What, now, is the meaning of these rather remarkable fluctuations in the daily weight? One notices at once the curious resemblances these curves bear to immunity curves, such as may be obtained by a series of opsonic indices. In 3 and 5 one sees short and long negative phases; in 4 the pre-negative rise, often so marked in phthisis; in 6 and 7 the irregular waxing and waning of immunity following an unsuitable vaccine, and usually indicating active autoinoculation. Opsonic records abound in curves similar to these here indicated. Is it possible that these weight curves are immunity curves? From the appearance of them one would not be surprised to find this to be the case. The proof also is not far to seek, for it remains only to plot an immunity curve by opsonic estimations of the blood, taken at the same time as the weight.

Chart 3 is a record of the daily weight and opsonic index in a case of early phthisis, with very slight signs at the left apex; no secondary infection. It is typical of a large number which have been plotted, and shows in a most striking manner that the weight curve (broken line) pursues an undulating curve in detail almost identical with that of the opsonic content of the blood (continuous line).

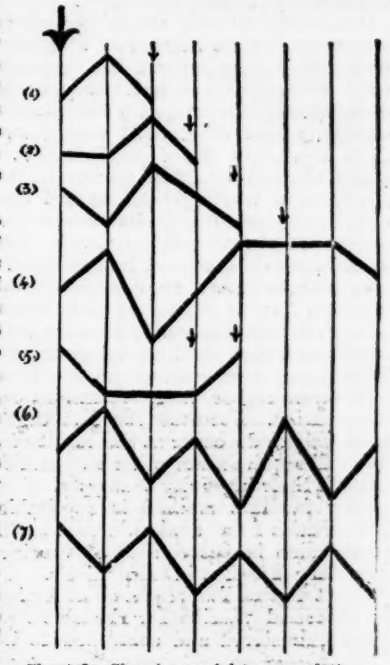

Chart 2.—Showing weight curves following tuberculin.

Herein, then, is provided for us the proof that the daily weight curve is an immunity curve, and as such a rational method for controlling treatment by tuberculin. But this chart illustrates also a further point which is of considerable importance, and that is that the weight is not quite so sensitive as the opsonic index. The only point at which the curves of index and weight differ occurs immediately after the first dose, the index showing a short negative phase, the weight, on the contrary, rising. The patient had no symptoms suggesting a serious negative phase. If the weight falls after a dose (see response to third dose), the patient frequently complains of malaise. In either case one must presuppose a negative phase. When, however, the weight does not drop, such negative phase may be disregarded; not so where the weight curve shows a fall. Then, again, the weight chart, by reason of the continued fall, gave a better indication that dose 3 was too large than the opsonic index. One further advantage possessed by a record of the weight over the index may be noted, and that is the general rise which may take place over a prolonged period, showing general improvement. The index, on the contrary, remains within certain limits, and gives no indication of general improvement or the reverse. One readily calls to mind cases in which a

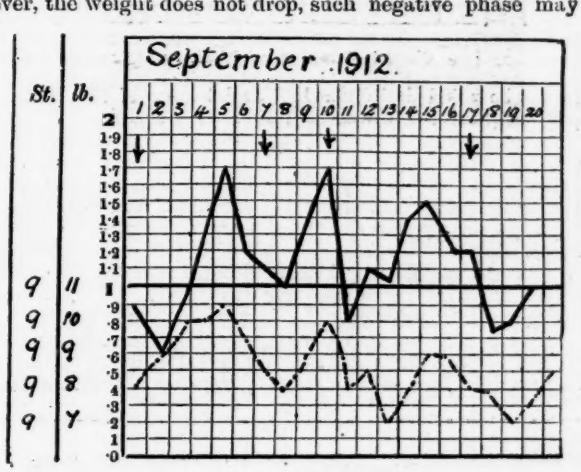

Chart 3.—Showing daily weight and opsonic index. Doses of T.R. were given in the following order: 50000, 50000, 40000, 100000.

high index frequently occurred, yet the condition was getting worse, and the weight (more important than all) was steadily tending downward.

It is held by all who use the opsonic method that vaccine treatment is most accurately and safely to be controlled by index determinations, but unfortunately in practice daily estimations can but rarely be performed. On the other hand, the majority of those who dispute that method, whilst they admit that theoretically an opsonic chart should be the ideal indicator, yet consider that errors of technique and personal bias are liable to invalidate the whole procedure and render it useless. If, now, it be granted that observations of excursions of the weight and of the opsonic index are but different methods of recording the course of immunity, then by means of the daily weight chart an opsonic curve is automatically obtained, and the objections to the index disappear. There remains a small minority who regard the opsonic index merely as a figment of an imaginative brain, and opsonic fluctuations as indicating changes in the grey matter of that brain rather than alterations in the serum under examination. For these the fact that fluctuations in the daily weight do occur as the result of tuberculin inoculation will require some other explanation, which one must leave to their ingenuity to supply.

How far this method is applicable in other vaccine therapeutics I am unable to say. It may, however, be of great value in the control of vaccines directed against secondary infection in tuberculosis.

Chart 4 gives the weight chart during four weeks when streptococcal vaccine for rheumatic pain and bronchitis was administered and controlled entirely by this method.

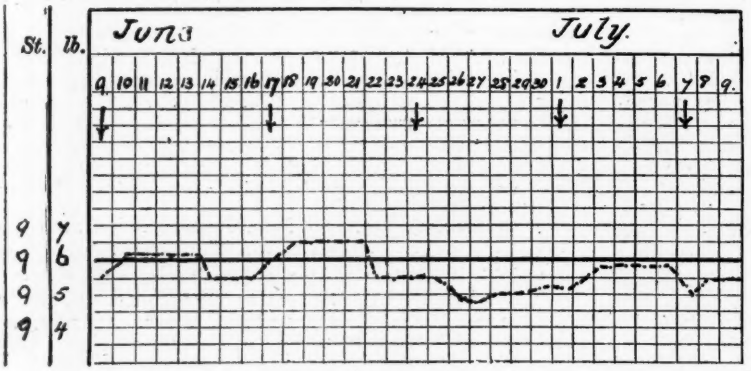

Chart 4.—Showing weight after streptococcal vaccine.

It will be noted that doses 1, 2, and 4 were of the correct size, but that dose 3 was too large.

In conclusion, I append suggestions for treatment of a case of phthisis by tuberculin, in accordance with the indications provided by a daily weight chart. Reference throughout is to T.R. or P.T.R. The daily weight is taken for a few days before the first dose, which should be small, in an afebrile case, say $\frac{1}{50}$ to $\frac{1}{10}$ mg. of T.R., and whatever the weight curves may be, the interval between the doses should never be more than five days, until high doses are brought into requisition.

After a dose no curve may appear on the chart; the weight pursues its course steadily upwards, downwards, or in a straight line, as the case may be; one infers that the dose is too small; it may be trebled on the third day. Should, however, a curve develop, then the next dose may be given in accordance with the accompanying table, and at that point in the curve indicated by the small arrows (see diagram).

After the patient has had a few doses, he may be instructed to come when the weight begins to fall after the rise, though not later than the fifth day.

Weight Curve as Diagrammatically Represented Above.	Interpretation.	Dose Proportionate to the Last Dose Given.
1	Dose too small	Double the dose on the second or third day.
2	Correct doses	Increase by 50 per cent. on the third to fifth day.
3		Increase by 20 per cent. on the fourth to fifth day.
4	Dose too large	Decrease by 50 per cent. on the fifth day.
5	Dose much too large	Give half the dose on the third to the fifth day, when malaise has ceased.
6	Tuberculin to be changed or discontinued	Try bovine or some other form of tuberculin, or vaccines for secondary organisms.
7		

THE BACTERIOLOGY OF THE MOUTH IN MAORI CHILDREN.

BEING PART OF AN INVESTIGATION INTO THE CAUSE OF IMMUNITY TO DENTAL DISEASE IN THE MAORI OF THE URIWERA COUNTRY, N.Z.

BY

H. P. PICKERILL, M.D., M.D.S.BIRM.,

AND

S. T. CHAMPTALOUP, M.B., CH.B., B.Sc. (P.H.)EDIN.

(From the University of Otago, N.Z.)

(Abstract.)

As stated in a previous report, a number of films were made from the mouth direct, in order to obtain a general idea of the number and character of the organisms present. All the films were made from perfectly healthy mouths, both as regards teeth and soft tissues. Except where otherwise stated, the subjects were children between the ages of 4 and 15 (approximately), since this represents the period of life during which European children appear to be most susceptible to dental caries. Four films were made from each of fifty immune individuals as follows:

1. From mixed saliva well triturated in an agate pestle and mortar, and stained by Gram's method.

2. From the gingival "deposit," of which there was in all cases extremely little, and in the younger children it was difficult to find. This was gently mixed with 0.9 per cent. sodium citrate on the slide, allowed to dry slowly, and subsequently stained by Gram's method, and counterstained with weak carbol fuchsin.

3. An attempt was made to estimate the number of organisms present in the saliva by making films of mixed saliva and citrated formalined blood, the idea being to count the organisms against the red blood cells, and so obtain an estimate of the number of organisms present in any given quantity of the saliva. It was not found practicable to shake the emulsion with sterile beads, but the saliva was well triturated, and the mixture with the blood made as efficiently as possible. It has, however, been found, owing to the clumping of the organisms, their irregular distribution, and the presence of epithelial cells containing large numbers of organisms, that the slides are not of any practical value, for it was not possible to make a reliable count. The slides were stained by the Jenner method.

4. One film from the saliva was stained by Ziehl-Neelsen for acid-fast bacilli, and those showing acid-fast bacilli after ringing with Leitz object marker were further decolorized with alcohol to eliminate saprophytic bacilli.

The results of the examination of the films thus obtained will be found in the accompanying table. The outstanding features may be said to be, firstly, the very large number of organisms present, and, secondly, the great similarity to organisms found in European mouths. The organisms in the tables are, of course, classified only morphologically, and, as far as possible, according to their retention of Gram's stain.

The organism present most frequently and in the greatest numbers was a Gram-negative coccus, which resembled the *Micrococcus catarrhalis*. These organisms always occurred in clumps, and were present in 88 per cent. of cases in the gingival deposit and in 79.3 per cent. in the saliva.

The well-known *Streptococcus brevis* of the mouth was present in the greater proportion, both in the saliva and the gingival deposits. The *Leptothrix racemosa* seemed to flourish luxuriantly in a very large number (68 per cent.) of the mouths, sometimes occurring as isolated specimens, but more often in dense masses. For the most part these organisms were granular in appearance and stained some-

	Percentage of Films showing Organism.	
	1. In Saliva.	2. In Gingival Deposit.
COCCI:		
Coccus—Gram-negative	79.3	88
Staphylococcus	35.7	34
Streptococcus brevis	85.7	72
Streptococcus (large and in chains)	12.2	10
Diplococcus (large)...	41.8	42
Pneumococcus	16.3	2
Sarcina...	0.61	—
Streptococcus longus	—	6
BACILLI:		
B. maximus	55.1	54
B. mesentericus	61.2	54
Short round-ended (Gram + and −)	26.5	32
Diphtheroids	8.1	4
B. subtilis	—	4
Fusiform	20.4	32
THREAD FORMS:		
Leptothrix racemosa	41.8	68
Fine threads (Gram + and −)...	28.5	54
SPIRILLA:		
Comma-shaped vibrios	22.4	74
Spirochaeta dentium	38.7	80

what irregularly. In 54 per cent. of gingival deposits and 28.5 per cent. of salivas there were present, also in large numbers, long fine thread-form organisms; for the most part these were Gram negative, but they appeared to stain irregularly. They might possibly be classed as *Leptothrix innominata* (Miller). Spirochaetes and vibrios (Gram-negative) were very numerous, and in some cases seemed to exert an antibiotic effect upon the other organisms and to have grown largely to the exclusion of the remainder. Fusiform bacilli were found associated with spirochaetes.

A fusiform bacillus, a *Streptococcus longus*, and a capsulated diplococcus resembling the pneumococcus were present occasionally; their presence evidently occasioned no reaction on the part of the tissues. A very large streptococcus (*S. maximus*) was found in a considerable proportion of cases; it occurred in chains of medium length (of from five to ten organisms), and was Gram-positive. A large, somewhat flattened Gram-positive diplococcus was similarly present in a considerable number of salivas and gingival deposits, probably the *Diplococcus crassus*.

Short, round ended bacilli, sometimes retaining and sometimes losing Gram's stain, were frequently present. They might have belonged to one of several groups, but it was thought that for the present purpose exact identification could not be very accurate, and was not specially necessary. A streptothrix was identified in one gingival deposit film, and a yeast in another.

Speaking generally, Gram-negative organisms predominated. Again speaking generally, it seemed that in the salivas there were perhaps more organisms present than one would expect to find in a normal healthy European saliva, and that in the gingival deposit there were on the whole considerably more thread forms and spirochaetes than are usually seen in a similar preparation from the mouths of Europeans.

In one case in both saliva and gingival deposit there were present numbers of unbranched thread forms with distinct gonidia, the whole retaining Gram's stain. These were not so large as a *Leptothrix racemosa*, and were not at all granular. Very large, broad bacilli and diplobacilli were found in one or two cases; these were Gram-positive (these might possibly have been a very small yeast form).

Leucocytes were present in the majority of films from the *materia alba*, though in most cases they showed plasmolysis, and in others were disintegrating. In only one case was active phagocytosis observed. It was conjectured that perhaps the films from the gingival regions would have shown that immunity was due to phagocytosis, but no such evidence was forthcoming. This absence of active phagocytosis in saliva agrees with what one of us (H. P. P.) found experimentally on a previous occasion.[1]

Desquamated epithelial cells were common in the saliva films, and usually, though not always, were loaded with organisms—as a rule the *Streptococcus brevis*—and it is a question as to what extent this may be regarded as a true phagocytosis similar to that which is seen in endothelial cells elsewhere.[2]

In the saliva films stained by the Ziehl-Neelsen method only two acid-fast bacilli were found. They were stouter than tubercle bacilli, but showed some irregularity in staining. They were ringed on the slide and further decolorized with alcohol when the red colour was discharged, thus showing the bacilli to be of the acid-fast group other than tubercle.

In order to test the possibility of carrying out more accurate and detailed bacteriological work without fitting up a laboratory on the spot, swabs from the gingival margins were taken in 6 cases at the last village visited and forwarded by post to the laboratory at Dunedin. They, however, occupied exactly a week in transit (despite the fact that the guide rode in with them eight miles to the nearest post-office on the same afternoon that they were taken), so that undoubtedly many of the less hardy varieties died out.

The following organisms were isolated from each swab:

1. Pure culture *Staphylococcus aureus*.
2. *Streptococcus brevis*.
   Staphylococcus aureus.
   Pneumococcus.
   Diphtheroids.
   Large Gram-positive cocci.
3. *Streptococcus brevis*.
   Streptococcus longus.
   Streptococcus-bacillus.
   Gram-negative bacilli (a few).
4. *Staphylococcus aureus*.
   Diphtheroids.
5. *Streptococcus longus*.
   Staphylococcus albus.
   Diphtheroids.
6. *Streptococcus brevis*.
   A large Gram-positive coccus growing in chains.
   Streptococcus longus.
   Pneumococci.

The swabs were inoculated on agar, inspissated serum, and in peptone broth; blood agar was not used, owing to the age of the swabs on receipt.

It is interesting to note, first, that the varieties of organisms isolated by cultivation were for the most part those least in evidence in the smears made direct from the mouth; and, secondly, they were precisely similar to what one might expect to find in swabs from individuals in an ordinary civilized community. We came to the opinion that any conclusions based on cultures made from swabs so long after being taken would be very unreliable, and that, if detailed work was to be done, it would be necessary to have a bacteriological equipment on the spot—a matter of considerable difficulty and expense, owing to the inaccessible nature of the locality.

CONCLUSION.

Although this cannot be put forward as a detailed and exact bacteriological report on the oral cavity of Maori children, yet we think there is quite sufficient evidence to show that immunity to caries and oral infections is not in such children due to the absence of those organisms which are usually regarded as causal factors in such conditions.

[Towards the cost of this research a grant was made by the Royal Society of Medicine. If circumstances permit, the investigation will be renewed in November and December next.]

REFERENCES.

[1] *Prevention of Caries* (Cartwright Prize Essay), p. 191. [2] Ibid., p. 192.

THE late Mr. Edward Nettleship left estate of the gross value of £26,768, with net personalty sworn at £23,225. The testator left the bulk of his property to his wife for life, and on her death £3,000 to St. Thomas's Hospital to create or augment a fund for the endowment of lectureships in the Medical School, £1,000 to the Royal London Ophthalmic Hospital. Subject to some further bequests, he directed that if the ultimate residue of his property should exceed £9,000 then a further £2,000 should be paid to St. Thomas's Hospital Medical School, for the same purpose as the above legacy of £3,000, and £1,000 additional should be paid to the Royal London Ophthalmic Hospital.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

NOTE ON A SIMPLE METHOD FOR DIMINISHING CHLOROFORM AND ETHER SICKNESS.

Having observed that cases of gastro-enterostomy treated in the Fowler position had very little anaesthetic sickness, I have for the last six years raised the upper end of the patients' beds on blocks 12 in. high in all cases after chloroform or ether anaesthesia. This I continue for twenty-four or thirty-six hours.

This plan has been followed by a great diminution in the amount of sickness. By the old method, in which patients were kept lying in bed with the head very low, the amount of sickness was very great in many cases. My staff nurses at the Western Infirmary and nurses in private confirm the statement that the improvement since the upper ends of beds were systematically elevated has been very great, and in consequence the suffering to patients and the labour to nurses is very much less.

The reason that this method is satisfactory is purely mechanical, as it is more difficult to be sick in an elevated position than with the head low. Certain patients are, of course, very sensitive to the influence of chloroform and ether, but even when on previous occasions patients report that they suffered for days with sickness, when in the elevated position the sickness very soon passed off.

After a six years' trial of the above improvement I think it is right to bring it before the profession in order that they may have the opportunity of testing its efficiency.

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Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow.

PROFUSE HAEMORRHAGE IN DIPHTHERIA.

A. R., a boy aged 5, after being, in his parents' opinion, slightly unwell for about ten days, was seen on September 13th by a medical practitioner who thought it was not a case of diphtheria. On September 15th he pronounced it diphtheria, and injected 2,000 units of antitoxin. The boy was removed to the Cheshunt Isolation Hospital. He was said to have vomited blood that morning. On admission his temperature was 103° F., pulse 130. Blood was oozing from the throat, pharynx, and nose. Antitoxin, 4,000 units, was injected at once, and that evening he vomited blood and pieces of membrane.

On September 16th the temperature was 103° F., and the pulse 130, but very variable. He had passed in the bed blood and membranous casts of the bowel (several feet). He was injected with 4,000 units and 4,000 units given by the mouth. In the afternoon I saw what he had passed in the pan—about 1½ pints of blood with membranous casts—one piece more than 2 ft. long; 4,000 units were given by mouth, and calcium lactate 15 grains. Brandy 1 drachm was ordered every four hours. At 10 p.m., as his pulse and temperature were varying rapidly, I examined his ears and found the left meatus full of membrane and inflamed; I swabbed this out and incised the inflamed lining of the meatus. He was given 4,000 units by the mouth. He passed a fairly good night; and when seen on September 17th the bowels had been well opened, the stools containing no blood but much membrane. The pain in the head of which he had complained had disappeared, and he was taking food well. The throat and ear were clean; the temperature was 98° F., and the pulse 124. On September 18th the temperature was 99° F., and the pulse 120. The bowels had been opened once, but he had passed no more blood or membrane. He was feeding well. The amount of brandy was diminished. On September 19th the temperature was normal, and the pulse 120; he was feeding well, and was cheerful though weak.

There were no further complications, and recovery was uninterrupted.

In other cases of diphtheria I have tried the application of antitoxin to the affected palate, tonsils, etc., but not with much effect. In this case it was evident that the prima via was implicated, and the topical application appeared to be successful.

Walter F. Clark, L.R.C.P. and S.Edin., D.P.H.
Cheshunt, Herts.

MIXED-CELLED SARCOMA TREATED BY LOCAL EXCISION AND COLEY'S FLUID: NO RECURRENCE AFTER THREE YEARS.

W. W., aged 40, consulted me in September, 1910, complaining of a cyst in the calf of the right leg, which bled on the slightest injury. At Christmas, 1909, he noticed three small black marks in the centre of the right calf; these united, and the mark grew until, when seen in September, 1910, it had attained the size of a large gooseberry, forming a tumour raised about ¾ in. above the level of the skin with a base of 1¼ in.; it was freely movable with the skin, and showed signs of recent haemorrhage from friction of trousers. The tumour was removed on September 4th, 1910, under local anaesthesia. The Laboratory of Pathology and Public Health, 38, New Cavendish Street, reported that it was a typical mixed-celled sarcoma.

On September 10th, 1910, the patient was seen in consultation by Mr. Sherren, who advised further local excision and treatment by intramuscular injections of Coley's fluid. On September 20th I excised the skin and subcutaneous tissue down to the muscle for the extent of 4 in. by 5 in., and applied skin grafts.

Ten days later I started Coley's fluid (Parke, Davis, and Co.) ♏ss. It was injected daily, increasing ¼ ♏ each day,

until—after an injection of ♏ ij—the temperature ran up to 103.2°, and the patient had a rigor with acute rheumatic pains. After a pause of five days injections were continued twice weekly, increasing each time by ¼ ♏; each injection was followed by severe rheumatic pains and slight rise of temperature, but the patient was able to be out of bed in the intervals. When the dose had reached ♏ iij it was continued without further increase, but after three doses of this strength he had a sharp attack of influenza (November 10th), and the injections were then stopped. At this time he had been having injections for six weeks.

The injections were started again on January 18th, 1911, with a dose of ♏ j, increased as before (injections twice weekly); after a dose of ♏ jss he had a severe rigor with acute rheumatic pains. Injections were then given every four days until February 16th, when, owing to great depression and debility, he was sent away for ten days.

From February 27th to the end of March injections were given twice weekly, starting again at ♏ j and increasing up to ♏ ijss; each dose was followed by acute pains, but the temperature did not rise above normal, except on one occasion, when it reached 101.5°, and was accompanied by rigor.

During April, May and June a weekly injection was given, each injection causing severe pains.

The injections were always given into the right gluteus maximus, and the object aimed at was to cause severe rheumatic pains. In all he had forty injections. He was able to attend to his work after the end of October.

Wanstead. G. S. Ward.

NYSTAGMUS.

I MUST disclaim all responsibility for the discovery that in some cases of miner's nystagmus the eye movements are not concomitant. The credit belongs to Dr. Ohm of Cotbus, who has made a most exhaustive study of the nature of the oscillations of the eyes in this disease. He has devised a binocular ophthalmoscope by means of which both discs can be approximated and examined simultaneously. Mr. J. A. Wilson's instrument is a simple and ingenious method for bringing the images of the globes into apposition, so that their relative movements can be compared. I have been able to confirm Dr. Ohm's statement in a few cases of miner's nystagmus, but I cannot find non-concomitancy as frequently as he does.

Dr. Ohm and M. Dransart both state that exophoria is practically always present, and Dransart insists that it is the mostly important etiological factor in the production of the disease. Since reading Dr. Ohm's book upon miner's nystagmus I have examined every case of the disease I have seen with the Maddox box, and among about twenty patients I have only found one who had about half a degree of exophoria. It is difficult to understand such a discrepancy. Dransart says that weakness of the interni is universal, and Ohm has gone so far as to advance these muscles!

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Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

HEREFORDSHIRE GENERAL HOSPITAL.

TRAUMATIC PERFORATION OF GUT: OPERATION: RECOVERY.

(Reported by CLAUDE H. G. PHILP, M.B., B.C.Cantab., House-Surgeon.)

I VENTURE to report the following case, which, though it belongs to a very ordinary class of injury, raises some interesting points.

A working man, aged 68, was admitted to the Herefordshire General Hospital on Sunday, July 6th, 1913, about 1.30 p.m., with a history of having fallen off a chair after breakfast about five hours previously. Up to the time of the accident he had been in quite good health. It seemed that he had been standing on the chair picking cherries from a tree, when he slipped and overbalanced, falling with his abdomen across the back of the chair, which broke under his weight. He complained solely of pain in the pit of the stomach. He had not vomited. On examination, the upper part of the abdomen was slightly tender to the touch, but there was no rigidity or distension. In fact the whole abdomen was soft and easily palpated. There were no signs of free fluid or gas. The only other injury was an abrasion on the sacrum, which later developed into a troublesome pressure sore. His general condition was good and he was not in any great pain. The pulse was 60 and of good volume, the temperature 97.2°, the respirations 20.

As there were no definite signs of any abdominal lesion, the patient was put to bed and kept under observation. Nothing except a little water was given by the mouth. During the next six hours he vomited four times, and the temperature ran up to 102°, but soon dropped to 99°. He had a fairly comfortable night, only vomiting twice. The next morning the temperature was swinging between 98° and 100°, and the abdomen was more definitely tender, and becoming rigid and retracted. The liver dullness was decreased and dullness in the flanks increased; the pulse was 68.

It was then decided to perform an exploratory laparotomy. This was done under chloroform, twenty five hours after admission, and thirty hours after the accident. On opening the abdomen, turbid but not offensive peritoneal fluid was found, containing what appeared to be particles of food. A small perforation of the upper part of the jejunum, the size of a sixpenny piece, was discovered; it showed no evidence of disease, and it was closed with a purse-string suture. No other lesions to any abdominal viscus were found. The peritoneum was thoroughly dry sponged, a rubber tube drain was inserted, and the abdomen sewn up. The patient was rather collapsed after the operation, and the temperature dropped to 96°, but soon recovered. The pulse at no time rose above 68°. The Fowler position was adopted, and the patient had a good night.

Flatus was soon passed. The tube drained freely, and was mopped out dry daily. It was removed on the sixth day. The patient improved rapidly. The temperature never rose above 101°, and the pulse was quite good and slow.

With the exception of some bronchitis he made an excellent recovery. Convalescence was quite uneventful, though the wound healed very slowly. The patient went home in the twelfth week. On discharge, he was eating well and in normal health, with no signs of any abdominal discomfort.

Remarks.

The case presented a few features of interest. First, as to the cause of rupture. This was most probably caused by a small knuckle of bowel becoming nipped between the back of the chair and the vertebral column in the moment of falling. It was, in fact, a "buffer accident" in miniature. Next, the length of time which supervened before a diagnosis was possible, and before there were sufficient signs to justify a laparotomy on an old man. This was most probably due to the small size of the perforation, and to the absence of any virulent organisms in the stomach or small gut. The peritonitis set up was only of a mild character, and though the pus became very offensive it quickly abated. The prognosis was thereby much improved.

Lastly, the slow and regular pulse throughout was curious, and tended to mask the effects of the lesion in the earlier stages.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

AT a clinical meeting held on November 26th at the Metropolitan Hospital in conjunction with the Aesculapian Society, Dr. DAVID ROSS in the chair, the following were among the exhibits:—Dr. LEONARD WILLIAMS: A case of ascites due to tuberculous peritonitis in a boy aged 16. The condition was of four weeks' duration at the date of admission to hospital. Under treatment with calcium chloride, gr.x ter die, and liquid paraffin, the abdominal circumference was reduced in five weeks from 52.3 cm. to 43.3 cm., and the patient was making good progress towards recovery. There was no pyrexia. Dr. P. HAMILL: (1) Two cases of acromegaly, one in a middle-aged woman who presented typical facies and hands, a skiagram of the hands and skull being shown; the other in a man, aged 23, whose upper jaws were gradually enlarged. (2) (for Mr. MAYNARD HEATH) A baby, 6 weeks old, with a large *Congenital angioma* under the right hallux. It was proposed to defer operation until later unless the increase were marked. (3) A boy, aged 6 years, who had a forward dislocation of the clavicle at the sternal end; it had been caused by a van wheel passing over the boy's shoulder. No other injury was sustained. Reduction was effected by digital manipulation after fixing the arm as for fractured clavicle, but displacement immediately recurred. It was expected that a false joint would be formed, and that some permanent deformity but a useful arm would result.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.

A MEETING of this Division was held on November 25th at the Royal Sea-Bathing Hospital, Margate. Dr. STREET, the Chairman, presided, and fourteen members were present. Dr. WALTER GRIFFITH, of St. Bartholomew's Hospital, read a paper on uterine haemorrhage. A hearty vote of thanks was carried on the motion of Mr. SUTCLIFFE.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

AT a clinical meeting on November 24th, Sir DAVID FERRIER, President, in the chair, the following were among the exhibits:—Dr. JOHN GAY: A case of *Haemorrhage from both breasts*. The patient, an unmarried woman aged 35, had suffered from epistaxis from time to time, and menstruation had always been considerable in quantity. There was no history pointing to haemophilia. Severe haemorrhages had occurred irregularly from both breasts since March, 1912. The attacks of haemorrhage had lasted on and off for two or three months at a time and ceased in September, 1913. Calcium lactate and chloride had no effect, but turpentine and sea air had caused some improvement. There was no characteristic change in the blood. Dr. ROBERT HUTCHISON: A case of *Hypertrophic biliary cirrhosis, with splenomegaly*, in a girl aged 4½ years; the patient was very jaundiced, and had frequent pale stools. Other members of the family had not been jaundiced, and there was no reason to suspect syphilis. Both the liver and spleen were considerably enlarged. There was no ascites and no acholuria. Fragility of the red cells was not increased. Dr. J. L. BUNCH: (1) A case of *Papulo-necrotic tuberculide*. The nodules were at first slightly raised, and distinctly infiltrated, but small and apparently quite superficial. They were always followed by a shallow scar. During the last six years areas which previously had only shown a superficial dermatitis had become covered with a number of small atrophic scars, and when shown a very large number of such scars were present. Microscopically giant cells were present, but no tubercle bacilli were seen. Tuberculin had failed to arrest the disease. (2) A case of *Linear lichen planus* in a woman aged 27. The point of special interest was that a characteristic lesion had developed exactly in the position of a scratch, since the affection is not generally regarded as contagious or capable of being inoculated. Dr. REGINALD JEWESBURY: A case of *Pneumothorax* which had persisted for nine months in a boy aged 9 years. Recently, within a period of fourteen days, the pneumothorax had disappeared, and the lung had expanded perfectly. The points of interest were the age of the patient, the absence of effusion throughout the course of the disease, and the complete recovery. Dr. S. A. KINNIER WILSON: A patient with *Bilateral cervical ribs*, shown to illustrate the diagnosis between that condition and progressive muscular atrophy. The wasting was confined to the abductor pollicis, the opponens pollicis, and part of the flexor brevis pollicis, whereas in progressive muscular atrophy the wasting was a global one—that is, it involved the eminence as a whole.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

AT a meeting on November 25th, Dr. SAMUEL WEST, President, in the chair, Drs. A. M. GOSSAGE and BRAXTON HICKS, in a paper on two cases of *Non-cancerous tumour of the stomach*, said they considered benign tumours of the stomach to be rare; sometimes they were discovered only accidentally at a *post-mortem* examination. In one of the cases recorded there was a sessile tumour the size of a golf ball. The intestines contained blood and the viscera were very pallid. Histologically the growth consisted of a mixture of fibrous tissue and unstriped muscle elements. In the second case, the patient, a man aged 37, had a fall two and a half years previously, and afterwards suffered slight abdominal pain and indigestion. A few days before admission to hospital he had severe pain in the back and in the abdomen. On the third day after admission he vomited blood, and during the following week he became delirious. The liver was slightly enlarged. On autopsy the body was found well nourished, but the viscera pallid. The stomach contained a round tumour the size of a golf ball, attached by a narrow pedicle to the middle posterior wall. A black speck was seen, as if it were the site of a haemorrhage. The tumour was of a low degree of malignancy. The special feature of the blood picture was the presence of an enormous number of nucleated red cells, some of the nuclei being bilobed, and some trilobed, showing great attempts to compensate for the blood loss. Dr. NEWTON PITT read notes of a case in which a *Fish bone impacted in the parotid duct* was the focus of a calcareous deposit. The patient, a man aged 58, said he had got a fish bone in his throat, but a laryngologist found nothing. Afterwards the parotid gland became swollen and tender, and *x*-ray and other examination revealed an elongated body in the duct, lying lengthwise. Dissection of the duct, the walls of which had become much thickened, failed to find the body, and the wound was sewn up and healed. But there was a recrudescence of the trouble, and suppuration and breaking down of the wound occurred, when the small body which had caused the trouble appeared at the site of the incision. In detailing a number of similar cases culled from literature, the author said calcification did not necessarily follow, even when impaction had existed a year. Dr. BATTY SHAW and Mr. R. HIGHAM COOPER showed a case of prepuberal atrophy of the testieles in a young man, aged 24, whose height was 6 ft. 3 in. and weight only 7 st. 8½ lb. He had never had nocturnal emissions nor experienced sexual desire. He was very long limbed, the length from the top of the symphysis pubis to the ground being 42 in., while that of the ordinary man was 33⅜ in. The pelvis was narrower from side to side than from front to back. The bones generally were somewhat decalcified, and there was a striking delay in development. Dr. Shaw raised the question whether gigantism was a result of functional disturbance of the pituitary body only; he also asked whether this patient could be said to have an osteomalacic pelvis, and, if so, what was osteomalacia dependent upon? He contended that the case showed that osteomalacia was one of the effects of faulty excretion in the case of several glands, not of one only. Dr. DOUGLAS DERRY demonstrated a pelvis of a Soudanese of ancient date which he brought from the neighbourhood of the Blue Nile. This showed bilateral synostosis of the sacro-iliac synchondrosis. The index of this pelvis was 125, as compared with 103 for the orang, and 80 for the European female. He also pointed out the related kyphosis of the spine in these abnormal cases. Dr. Shaw's patient had a marked curve of the spine in the upper part. Dr. PERCY KIDD discussed a case of combined sclerosis of the spinal cord, with possible *Dystrophia adiposo-genitalis*, in a boy, aged 5 years, whose parents were Polish Hebrews. He was very fat, of olive complexion and almond-shaped eyes. The genital organs were very undeveloped, but the child was bright, and the cranial nerves normal, though he could neither walk nor stand alone. He had incontinence of urine. The fundus was deeply pigmented, but the optic discs markedly pale. Radiography showed the pituitary fossa to be ill-defined. At the age of 16 months the patient had diphtheria and frequent convulsions, and since that time had been liable to malaise. At a children's hospital a decompression operation was suggested, but declined. The cerebro-spinal fluid was normal. Probably there was a change in the sella turcica.

DERMATOLOGICAL SECTION.

AT a meeting on November 20th, Dr. J. J. PRINGLE, President, in the chair, the following were among the exhibits: Sir MALCOLM MORRIS and Dr. DORE: A case of *Lupus erythematosus* presenting some unusual features—namely, itching in association with the eruption of the face; scaly patches on the chest and inguinal regions; a patch resembling psoriasis on one elbow and lesions on the tongue and buccal mucous membranes. Dr. PERNET regarded the condition as lupus erythematosus, a view with which Dr. ADAMSON agreed, but the PRESIDENT suggested the coexistence of seborrhoeic psoriasis. Dr. DOUGLAS HEATH (Birmingham): A pigmented eruption in a medical man; Dr. ADAMSON and Dr. PERNET thought it the adult form of *Urticaria pigmentosa*, but Dr. WHITFIELD considered it to be a disease *sui generis* of which he had seen two cases. Dr. EDDOWES suggested that it was an infection of sweat ducts. The PRESIDENT, who had observed two similar cases, thought the presence of dermographism and the pigmentation brought it within the limits of adult urticaria pigmentosa. Dr. PRINGLE: A case of *Mycosis fungoides* in a woman aged 40 years. The disease began in February, 1912, during puerperal fever, and the patient first came under observation as a *femme rouge* with

universal erythrodermia, complete loss of hair, marked enlargement of spleen and lymphatic glands without leucocytosis, typical extensive lichenification, deep pigmentation, and a very small number of tumours. Points of special interest were the reappearance of hair on the scalp, eyebrows, and eyelashes, when the erythrodermia and infiltration diminished, despite fresh manifestations elsewhere. Dr. ADAMSON: Another case of *Mycosis fungoides* of five years' duration in a woman aged 65. She presented rounded plaques on the skin, but no tumours. There was no leucocytosis. She had had forty doses of *x* rays in six weeks. In response to Dr. VINRACE, the PRESIDENT said that one such case under his care had been treated by *x* rays at very short intervals over a period of fifteen years, the disease being thereby kept in abeyance, and Dr. DORE considered that frequent repetition of the *x* rays was often imperative on account of the large areas of skin usually involved, the rapid progress of the disease and the presence of commencing lesions under apparently healthy skin. Dr. WALSH: A case of *Epidermolysis bullosa* in a boy, aged 15, associated with congenital morbus cordis. Dr. WILFRID FOX said he had seen an acquired case of this disease, and Dr. MACLEOD said there were records of acquired cases, although it was doubtful if they were true epidermolysis bullosa. He could not understand how congenital morbus cordis should stand in any relation to such a condition. Dr. BOLAM (Newcastle) and Dr. PARKES WEBER could not detect any evidence of abnormality in the heart. Dr. NIXON (Bristol) suggested a possible connexion between the Raynaud phenomena and the epidermolysis. The PRESIDENT believed that low grades of the condition were common, and he was acquainted with several families the members of which blistered with abnormal facility. The case was referred to a subcommittee for report. Dr. DUDLEY CORBETT gave a demonstration of a new *Radiometer*, an instrument for measuring the tint of the Sabouraud pastille now in daily use at St. Thomas's Hospital. Dr. WHITFIELD, Dr. MACLEOD, Dr. SEQUEIRA, and Dr. AGNES SAVILL testified to the great utility of the apparatus. Dr. HALDIN DAVIS: An infant, aged 10 weeks, with extensive *Psoriasis;* he mentioned two similar recorded cases of three and ten weeks' duration respectively. Dr. MACLEOD said he had shown a similar condition in an infant 4 weeks old; it had recovered rapidly under treatment, and this fact suggested a diagnosis of *Seborrhoeic eczema*. Dr. WHITFIELD asked if the scales had been examined microscopically for seborrhoeic organisms. Dr. ADAMSON said he called these cases seborrhoeic eczema and had observed them in association with that disease in the mother. Dr. PERNET: An instance of *Dermatitis artefacta* in a young woman who presented circular patches on the chest and back. Dr. SEQUEIRA: (1) A girl with a very extensive and severe eruption of *Tuberculides*, the lesions on the upper limbs being of small type, and those on the lower limbs of large type. The condition followed a septic wound and tuberculous glandular swellings. The patient had never been free from lesions for seven years, and had been treated with a course of tuberculin for three and a half years. Dr. MACLEOD asked for a report of a biopsy and inoculation in a guinea-pig, as he considered that these cases were true tuberculous infections. (2) A case of *Lichen verrucosus* in a farm labourer, aged 43 years, of five years' duration, presenting warty growths of large size symmetrically distributed on the extensor aspects of the fingers, hands, and legs. The case gave rise to much discussion, and the PRESIDENT, while admitting the resemblance of the patches on the legs to lichen verrucosus, hesitated to accept the diagnosis. Dr. ADAMSON regarded the case as of erythema multiforme type. Dr. DOUGLAS HEATH had seen it previously, when the lesions were much more erythematous and not horny on the surface. Dr. A. M. H. GRAY said he had had two somewhat similar cases, one of which he regarded as *Erythema elevatum diutinum*, and another in a child associated with rheumatic nodules. Dr. WHITFIELD thought the condition on the knees resembled *Lichen planus*, but there was an early lesion which did not correspond with that disease. (3) A case to illustrate the *Luetin reaction*. This was not present in florid cases of syphilis, but he had found it in one primary case and in one instance in which the Wassermann reaction was negative but which had improved under antisyphilitic treatment. The PRESIDENT understood that the luetin reaction was inconstant and unreliable. Mr. MCDONAGH said it was of no value in primary cases, and the same reaction could be obtained with many other substances. Dr. WHITFIELD: A case of *Xanthoma tuberosum* of two years' duration in a woman aged 53. Dr. EDDOWES: A case of *Lupus erythematosus* affecting the scalp and face of a young girl; regrowth of hair with altered pigmentation had taken place on a patch on the scalp. Dr. GRAHAM LITTLE: (1) A case of very severe and extensive *Tuberculous syphilides* which presented a considerable resemblance on the face to elephantiasis graecorum. (2) A woman, aged 67 years, with *Hypertrophic lichen planus* of four years' duration, one of the masses having ulcerated. Histological examination confirmed the diagnosis of lichen planus and negatived that of malignancy.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 19th, Dr. G. H. MELVILLE DUNLOP in the chair, the following were among the exhibits: Dr. DAWSON TURNER: Two cases under radium treatment—one a naevus of the cheek, the other a port-wine stain complicated with a *Keloid produced by carbonic acid snow and nitric acid;* both showed improvement. Dr. NORMAN WALKER: A naevus in a child undergoing spontaneous recession; a case of dermatitis autophyta in a young woman. Dr. JOHN D. COMRIE: *Spastic paraplegia* in a child, aged 7 years, who could walk with the legs crossed only when supported. The Wassermann reaction was negative. The cause was probably a congenital defect at the upper end of each Rolandic area. Dr R. A. FLEMING: Two cases of *Beriberi* in Hindu seamen, fed largely on polished rice; both showed peripheral neuritis with paresis, muscular tenderness, and large areas of anaesthesia; one also had oedema of the legs and feet, slight pleural and pericardial effusion, and dilatation of the left ventricle. Dr. EDWIN BRAMWELL: Two brothers, one aged 17, the other 11, who for four and one years respectively had had progressive difficulty in walking. Both showed a spastic gait, some ataxia, an intention tremor of the arms, nystagmus, and defective articulation of syllabic type. The condition was difficult to diagnose, but was apparently related either to Friedreich's ataxia or to familial ataxic paraplegia. Dr. LOVELL GULLAND: Four cases of *Aneurysm*, two showing bulging tumours on the thorax, two pressing posteriorly on trachea, oesophagus, and sympathetic nerve. Mr. JOHN FRASER: *Aplasia of the lower end of the tibia* in a baby of 6 months, producing inward displacement of the foot; the deformity had been relieved by removal of a portion of the fibula, and transplantation of a piece of the opposite fibula into the undeveloped tibia. Mr. L. BEESLY: A case showing left *Interscapulo-thoracic amputation* for tuberculous disease, a previous excision of the shoulder having failed to extirpate the disease. Mr. DAVID WALLACE: (1) A boy in whom accident had produced *Diastasis of the lower end of the femur*. Replacement under anaesthesia and extension having failed, plating had been done with an excellent result. (2) Partial resection of the anterior wall of the stomach for carcinoma in a man aged 46. The symptoms of haematemesis and pain had suggested duodenal ulcer. The immediate result of the operation was excellent. Mr. D. P. D. WILKIE: *Osteo-chondritis deformans* in a boy aged 8, the symptoms being a pronounced limping of the left hip for months, freedom of movement, both active and passive, except that of abduction, and absence of pain. A skiagram showed flattening of the epiphysis and rarefaction of the upper and outer part of the neck of the femur. Mr. J. W. DOWDEN: Two cases of *Fracture*, each of both bones of the leg, and each treated without splints by simply hanging the legs over the end of the bed. In both cases there was marked oedema produced, but with an excellent result, both in firm union and good position. Mr. G. CHIENE: (1) *Carcinoma of the sigmoid* in a woman, which had caused complete obstruction for fourteen days. Colostomy was performed, followed by resection of the growth twelve days later. (2) A case of large ventral hernia of long standing complicated by strangulation of an epiploic appendix in a *Subsidiary peritoneal pouch*. Mr. J. W. STRUTHERS: (1) A man aged 21, showing deformities produced by ostitis fibrosa; *x*-ray plates

showed multiple areas of bone, in which lime salts were deficient. (2) Case of *Jacksonian epilepsy* in a boy aged 9 years, which had been cured by osteoplastic craniotomy. Mr. C. W. CATHCART: (1) A case after operation for tuberculous glands of the neck; the internal jugular vein had been torn close to the skull and closed by plugging. The patient was an adult. (2) Recurrent fibroid tumours of neck and face, followed by cancer of the colon (splenic flexure).

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on November 20th, Mr. ROBERT JONES, President, in the chair, Mr. F. JEANS, in a note on *The Lane kink*, said he could not agree that this condition was due to the upright position. He had never met with it, except in association with appendicitis. When the ileum was kinked he had found that division of the band of adhesion released the ileum, and if the lozenge-shaped space so formed were sutured re-formation of the band was prevented by getting the bowels moved early and keeping them released. Mr. F. T. PAUL agreed with this view of the causation of the kink, and considered there was no warrant for extensive operations such as had been recommended. Mr. G. P. NEWBOLT described a case of *Appendix abscess*, in which there were continued rigors and high temperatures for some weeks after the abscess had been drained and washed out. A vaccine had been made, the discharge having been found to contain an enterococcus which could not be identified. The patient made a complete recovery, which the exhibitor considered was undoubtedly due to the vaccine. Dr. C. J. MACALISTER, in a paper on the *Influences of the venereal diseases*, spoke of the part taken by Dr. W. Carter and Dr. Birkbeck Nevins, both past presidents of the society, in the repeal of the Contagious Diseases Acts in 1886. It was proved that these Acts did not lessen the evils they were supposed to remedy. At the same time they caused a lessened sense of responsibility from Government recognition of immorality. Army statistics showed that when these regulations were rescinded there was a progressive decrease in disease. Education was making the soldier more moral and temperate. With regard to the general population, no substantial decrease in the disease was occurring, and a growing number of diseases not formerly considered to be syphilitic in origin were now definitely proved to be so. This was true even of some cases of congenital heart disease, and gonorrhœa had been proved to be one of the gravest dangers to which womanhood was subjected. Hence he appealed to the medical profession to lend all its influence to educate the public to understand the full evils of these diseases, not only to individuals but to the nation, many persons being rendered unfit to earn a livelihood, and deterioration of the race being brought about. Notification would be difficult until the public had been sufficiently educated, but this effected, it would be possible to proceed to effective segregation of carriers, certification as to fitness for marriage, and other measures for stamping out the plague. In the discussion that followed, Dr. HOPE said that the history of the Contagious Diseases Acts taught what to avoid, and he thought that in order to give practical and effective assistance in curing the evil the society should render every help to the Royal Commission. He proposed that a small committee of the society should be formed to go into the different points and consider how best to assist the Royal Commission. It was agreed that a committee should be formed, with power to add to its numbers.

A MEETING was recently held in the Langenbeckhaus, Berlin, for the formal constitution of an International Society for Sexological Research. The organizing committee consists of Professor Johannes Dück (Innsbrück), Professor Hans Gross (Graz), Professor Karl v. Lillienthal (Heidelberg), Dr. Max Marcuse (Berlin), Dr. Albert Moll (Berlin), Professor R. Seeberg (Berlin), Professor Sellheim (Tübingen), Professor L. W. Weber (Chemnitz), and Privy Councillor Julius Wolff, Professor in the Technical High School, Berlin. Professor Wolff was elected President; Dr. Moll, Vice-President. Among the members of the committee is Mr. Havelock Ellis, of London. Communications relative to membership should be addressed to Dr. Max Marcuse, Lutzowstrasse 85, Berlin, W.

Reviews.

JOHN HUNTER AND ODONTOLOGY.

THE volume entitled *John Hunter and Odontology*[1] is the outcome of two museum demonstrations given by Mr. J. F. COLYER on the specimens of teeth prepared by John Hunter preserved in the Museum of the Royal College of Surgeons of England. Mr. Colyer's work as Curator of the Odontological Section of that museum has given him an intimate acquaintance with John Hunter's preparations of jaws and teeth, and has inspired in him a feeling towards Hunter as towards a "master"—a feeling which is apparent throughout the book, and one which the reader readily makes his own. This feeling, however, has not prompted any glossing over of faults, the work of the master is faithfully dealt with, for he is big enough to take the burden of his errors.

The subject-matter proper of the book is preceded by a short life of Hunter in which his passion and genius for collecting are well illustrated, and by an account of the shameful tragedy of his manuscripts, a tragedy which Mr. Colyer has done his best to remedy, so far as odontology is concerned, by careful study of Hunterian tooth-specimens both in London and in Glasgow, where William Hunter's museum is preserved. In the rest of the book Hunter's work in odontology is dealt with. Large numbers of the actual specimens are illustrated and described, and wherever possible Hunter's own words are quoted. Reading these pages one marvels to remember that odontology was but one small part of his work; what he did in this alone would have made a monument for any man. His range of observation was astonishing. He illustrates the "situation of the teeth" by specimens taken from mammals, reptiles, fish, insects, and molluscs. The two latter are used to illustrate what Hunter thought to be teeth in the stomach, and though Mr. Colyer points out that the mechanism described is not to-day accepted as dental, the record serves to emphasize the immense range of Hunter's observations. One of the subjects is a Cape grasshopper. The extract from the Hunterian MS. catalogue with which Mr. Colyer prefaces his chapter on "Teeth in General" shows the broad common-sense views with which Hunter approached his subject; teeth, bills or beaks, those parts of an insect which are exterior to the mouth, "those that may be classed either with the teeth or the bill, such as the dividers of some reptiles—as the snail, leech, etc.," are all exhibited as subserving the same purpose. The many forms of teeth, their period of growth, limited or persistent, their uses, the methods of succession, their composition are all described with wonderful accuracy, though the existence of cementum was not recognized. Hunter prepared specimens to show the relation of the enamel-forming organ to the dentine pulp, and demonstrated the mode of formation of the complicated molar of the horse. To show the component parts of teeth he prepared transparent specimens, soaking them in acid, drying them and preserving them in oil of turpentine. His views on the growth of the jaws, deduced from specimens of his own preparation now in the museum at Lincoln's Inn Fields, are, as Mr. Colyer says, practically identical with the views accepted by anatomists at the present time; reading lately a monograph on the subject published in Vienna, we found them quoted with full approval. Mr. Colyer notes with wonder that so careful an observer could date the commencement of calcification of the first and second premolars at about 5 to 6 years and 6 to 7 years respectively, or the eruption of the first permanent molar at 12, the second at 18 years, and the third from 20 to 30. In Hunter's description of the calcification of teeth we find a reference to the method of demonstrating growth by feeding intermittently with madder, which was used by him to show the method of deposition of dentine as well as the growth of bone. On page 110 Mr. Colyer traverses Hunter's opinion regarding the loss of deciduous teeth which have persisted into adult life. Hunter regards

[1] *John Hunter and Odontology.* By J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon, Royal Dental Hospital of London and Charing Cross Hospital; Examiner in Dental Surgery, Royal College of Surgeons of England; Honorary Curator, Odontological Collection of the Museum of the Royal College of Surgeons of England. London: C. Ash, Sons and Co. 1913. (Demy 8vo, pp. 214; 161 illustrations; frontispiece portrait of John Hunter after Reynolds. 20s. net.)

the loss of these teeth as proving that the deciduous teeth grow loose and fall out of their own accord without needing any tooth underneath. Mr. Colyer remarks, "We know now that deciduous teeth without permanent successors will persist for years, and that their loss is brought about by pathological changes similar to the changes which occur in the permanent teeth." To this we may be allowed to rejoin, in defence of Hunter, that in our experience the roots of persistent temporary teeth are always more or less absorbed, and that this absorption as a general rule is the cause of their loss. In Hunter's days it was believed that human teeth grew continuously, a point he was at great pains to refute.

In discussing human teeth as an index to diet he is delightfully trenchant and masterful. His argument must be read in full to be thoroughly enjoyed, and Mr. Colyer does well to quote it, but we may give his conclusion, which was that man is a mixed feeder fitted equally to live upon flesh and upon vegetables. In the chapter on the pathology of the teeth Mr. Colyer indicates that Hunter's second work on the teeth seems to have been rather a careless addendum to the first, though Mr. Colyer's words are not quite clear. There are few specimens illustrating pathology of the teeth, but Hunter published ten chapters on the subject. Mr. Colyer notes that he held that caries began in the teeth themselves and that it might sometimes be treated by extraction, boiling, and replantation, that he recognized that gum-boil may arise from teeth free from caries, and that he knew the evil results of retaining loose septic teeth. Of Hunter's description of "the diseases of the gums and the consequences of them" he truly remarks that it "is an excellent clinical picture of the various stages of gum trouble from a marginal gingivitis to that acute ulceration of the gum margins accompanied by bone destruction which is seen in cases associated with the infection of Vincent's angina." Whether the "callous thickenings" on page 157 refer to certain types of recurrent epulis may be doubted—they may be the bony bosses of chronic periodontal disease.

Mr. Colyer shows that Hunter recognized true trigeminal neuralgia and understood the causation of tartar, and quotes from his chapters "Of the Irregularity of the Teeth" a passage showing that he recognized the movements of teeth after extractions, and based treatment thereon. Hunter's advocacy of transplantation is rather severely handled, and his views on dentition receive no great praise.

The last two chapters are devoted to Hunter's observations on dental anatomy and the pathology of the teeth in animals. The former consists largely of well-chosen quotations from Hunter's works, showing his range of knowledge and accuracy of observation and deduction, the latter of a description of the few pathological specimens from the lower animals now preserved in the Hunterian Museum.

Mr. Colyer has accomplished a work of love, and no one who reads the book can help joining in his enthusiasm for his subject. He has given to odontology a new master—John Hunter.

HAUSA CUSTOMS AND FOLK-LORE.

MAJOR TREMEARNE'S *Hausa Superstitions and Customs* [2] is a translation of a collection of folk-stories, told by Hausas in Northern Nigeria, prefaced by eight chapters dealing with their subject matter, and describing in part the daily life, customs, characteristics, and superstitions of the natives. To the translations are appended explanatory notes by the author himself, and references to parallel stories found in other parts of the world by Messrs. Hartland, Crooke, and others. There are some further notes on facial marks, and on the "Bori" or sacred dances. The book is illustrated by a number of interesting photographs, as well as by a series of excellent drawings of objects in common use.

The stories are for the most part "animal stories," typical of many others of similar style, collections of which, in the vernacular Hausa, have been published by Major Edgar[3] and other students of the Hausa language during recent years. But while most of the books hitherto published presume that the reader has some acquaintance with the Hausa language and people, whose life and habits of thought are illustrated, Major Tremearne's book is, as the second title implies, an introduction to the folk and their lore, and, for its understanding, needs no special knowledge of either. For this reason, it should be of great use both to students of folk-lore in general, and to officials and others who go out to Nigeria and wish to gain an insight into the ways of the people. The study of "modes of thought" as presented by these tales, will do much both to prevent errors in tact when dealing with natives, and to stimulate independent investigation. It is, indeed, generally true that most difficulties and troubles with natives, proceed from the European's ignorance of the simple facts and conventionalities of native daily life.

From a student's point of view, we think that Major Tremearne would have done well to explain somewhat more clearly than he does in the first page that the Hausas—whatever be the derivation of the word "Hausa"—are no more a homogeneous ethnic unit than are the Swahili in East Africa. It must be postulated that some tribe or people—probably of Berber origin, inasmuch as Hausa is a Berber tongue—conquered part of Hausaland at some period. Since that time their language (Hausa) has steadily been conquering neighbouring languages. The Hausa civilization is not indigenous, and a great many of the tales should not be regarded as having an independent origin in Hausaland, but as directly borrowed and adapted from Berber, Arab, and other sources. On p. 15, for instance, it is said that certain stories recall those of the *Arabian Nights*. It is more than probable that they are the same stories, carried across from Egypt or elsewhere, and slightly garbled in the process. On p. 429 an illustration of a stirrup and saddle is given, said to be "in general use." The stirrup and saddle in general use are, however, of a different pattern, and the illustration depicts a form of saddle and stirrup which is peculiar to the Tuareg of the Sahara.

More important, however, from a scientific point of view, is what we hold to be an entirely mistaken idea of "Bori dances." Major Tremearne (p. 145) writes:

> There is a peculiar institution amongst the Hausas known as Bori, and although it is not magic exactly—being more like hypnotism perhaps . . . it is regarded as uncanny by the more educated people . . . the ceremonies are usually described as a dance . . . at first merely a treatment for the insane, later on it was degraded into an objectionable form of dancing, though the origin was still apparent, since the actions of the dance simulated different forms of insanity.

The connexion of Bori with insanity is the connexion in native ideas between insanity and inspiration by God. The Bori dances are really dances in honour of various deities, whose attributes are imitated by the dancers. They are in origin similar to the Corybantic dances at Rome, or the bloody self-mutilation of the priests of Baal. The objects called "tsere," mentioned by Major Tremearne (p. 150), into which the "spirit" or "demon" passes, are really dedicatory offerings, indicating the special attribute of the deity, though they are used for "magical purposes." They are usually kept by the man or woman who can invoke the particular deity whose aid is required, but are sometimes kept in the hollow tree or other place where sacrifices are made to that deity. In short "Bori" was part of the ritual of the pagan Hausas (Maguzawa), not, as Major Tremearne appears to hold, a specially devised cure for insanity. Naturally it was discouraged by the Moslems.

The part of the book which deals with the personal characteristics of the Hausas is very good indeed, and conveys in a few pages (pp. 46-58) more information about the native point of view, and practice in the domain of "morals" in general, than can be found in many large treatises, written on the one hand by apologists for the negro, and on the other by his critics. Most Europeans begin by being surprised that the negro falls so far below European ideal standards, then go through a period when they consider he is all vices and no virtues, and finally get to see him in true perspective, and recognize his mental

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[2] *Hausa Superstitions and Customs: An Introduction to the Folk-lore and the Folk.* By Major A. J. N. Tremearne, B.A.Cantab., F.R.G.S., F.R.A.I. London: J. Bale, Sons and Danielsson, 1913. (Med. 8vo. pp. 561; 200 figs., 41 plates. 21s net.)

[3] *Litafin Tatsa-tsagi na Hausa*, vols. i, ii, and iii. Belfast: W. Erskine Mayne. 1911.

and moral characteristics to be as much facts as the colour of his skin or the texture of his hair.

On p. 100 and pp. 518 to the end are some observations on "tribal marks," with about 100 illustrations. The word "tribal" is apt to mislead, because a great many of the marks both on the faces and bodies—but especially on the bodies—do not in reality convey any indications of origin. There are at least three classes of marks. (1) Tribal marks proper (including "family" marks); (2) patterns (tattoos) which are done for magical purposes, or ultimately for ornament; (3) cuts or patterns done for medicinal purposes. The second and third classes naturally overlap to some extent—for example, it is often the blood-letting which works a cure rather than the pattern in which the blood-letting is done, though both are held to be equally important. In a number of instances the author remarks on patterns which are of the two latter classes that "the parents of the subject come from Kano, Zaria, Zamfara, or Gobir" as the case may be. In point of fact, all the important Hausa tribal marks are facial—and very few of the figures given contain *Hausa tribal marks*. As far as we are aware the only Hausa tribal marks which are certainly characteristic are No. 30 Daura, and No. 90 Kutumbawa of Kano.

It is unfortunate that Major Tremearne has borrowed some nine figures at the end from Dr. Karl Kumm's *From Hausaland to Egypt*, because of these figures only one (Daura), is correct. Sokote being a Fulani town, has no real tribal marks, though some Fulani are marked—usually with three cuts. Zaria has no recognized tribal mark at all. On the other hand Kano, Daura, Katsina, Gobir, and Zamfara, all have recognized facial marks, in addition to such other patterns as may be added for medicine, or for family identification, or ornament.

Apart from this question, however, the figures given are of great interest, suggesting as they do comparison with the Berber tattooing of North Africa. Figs. 3, 92, and 100, contain a pattern which is said to be a charm to attract prostitutes. This is similar to the "Tanit symbol" of the Berbers, and it may well be the "Tanit symbol," for Tanit, like Astarte, was worshipped by "ceremonial prostitution" among certain Berber tribes like the Oulâd Nâil.

It is satisfactory to note that the British Association has decided to publish the Hausa text of the stories translated by Major Tremearne. The development of Nigeria tends to the decay of folk-lore, and in this branch of anthropology, as in all others, we as a nation make a very poor showing in comparison with our French and German neighbours in West Africa. But why, we would ask, can scores of books as well illustrated, better set-up, and containing no less than this volume contains, be published in France for sums varying from 10 to 15 francs, when we in England have to pay 21s. for similar work? Major Tremearne writes (p. 9) that "this work can hardly be expected to do more than pay its way, even if it does that." We are not surprised. Few persons who are interested in West Africa have many guineas to spare.

RECENT RESEARCHES ON RHEUMATISM.

Its clinical features familiar to every one, examples of it at all times present in hospital wards, rheumatism still affords endless opportunity for investigation and discussion. Few workers have done more in this direction than Drs. Poynton and Paine, who long ago convinced themselves that a microbic origin must be discoverable, and who have succeeded in isolating an organism which fulfils all the classic requirements of a specific microbe, being found to produce the disease in lower animals, from whom in turn it has been re-isolated. Together, separately, and sometimes in conjunction with other physicians, they have from time to time made known the results of their researches to the profession, and many discussions have been held, papers written, and criticisms offered in support of their contention or the reverse. They have now brought most of their papers together into one portly volume, entitled *Researches on Rheumatism*.[4] The papers are for the most part arranged in chronological order, and taken together form a consistent account of a very protracted research which has acquired a special value as the joint work of clinicians and bacteriologists. The influence of the one over the other may have had the effect, as the authors themselves express it, of "keeping the bacteriologist sane and the clinician honest."

The subject is certainly one which calls for restraint on both sides. The discovery of a micro-organism which can set up corresponding lesions in the rabbit may well give rise to blind enthusiasm in the mind of the pathological explorer, but the less impressionable mind of the clinician recalls cases in which causes other than microbic have been at work, and at once reduces the headlong gallop towards a hasty conclusion to the sober trot of careful and painstaking investigation. Much criticism—some of it directly adverse—has been poured out upon the contention of Drs. Poynton and Paine that the microbe which they have discovered, and entitled the *Diplococcus rheumaticus*, is the essential factor in the production of the rheumatic process. Several skilled observers have failed to detect it, but others have had no difficulty. Although fully convinced of the correctness of their own views, the authors clearly recognize that many other influences are concerned in producing the various changes that occur in the course of the acute and chronic disease. The record of work that they have now put forth will doubtless remain as a valuable landmark in the course of discovery, but time alone will show whether the guide-post that they have set up is pointing to the true goal, or is only indicative of a side-track.

Full advantage has been taken of the great opportunity afforded by the clinical practice of the Great Ormond Street Hospital. In the opening paper of the series the possibly microbic origin of acute dilatation of the heart is discussed, in collaboration with Dr. D. B. Lees. The presence of myocarditis in such cases is strongly suggestive. The subject is carried a step further in another paper in which such microbial changes are described as occurring in the myocardium independently of pericardial or endocardial lesions. The first part of the book deals with the probable cause of such an infective process, and in the second part the authors give an account of their demonstration of the organism which they believe to be the actual cause of the rheumatic state. Many other workers, from 1886 onwards, have been engaged in similar researches, and full justice is done to them. Having established the fact of its presence, the authors entered into a long and careful series of researches into the behaviour of the diplococcus in the living subject. Their work is described in detail, and is illustrated with excellent photomicrographs, which demonstrate the actual findings upon which their conclusions are based.

The relation of the microbe to malignant endocarditis, to chorea and to the first manifestations of rheumatism in the very young, are each in turn examined at length. A comparison between the effects upon the heart of the pneumococcus and of the diplococcus respectively, has proved their marked pathological difference, in spite of morphological resemblance.

An important inquiry into the relations subsisting between rheumatism and appendicitis, published two years ago, established the fact that an intravenous inoculation might produce appendicitis, and this is held to prove that direct infection from within the alimentary canal is not an essential condition.

The final section of the work deals with acute rheumatism as a whole. The authors express their belief that the subject has only as yet reached the threshold of inquiry. Its relation to the other infective diseases to which childhood is subject, and its apparent connexion with climatic and local surrounding, have all to be determined, and prevention rather than cure should be the object of future research.

NOTES ON BOOKS.

Dr. Walter Guttmann's technical dictionary, *Medizinische Terminologie*,[5] first appeared in 1902; four more editions have been issued and sold out since then, and this speaks eloquently for the value of the dictionary. The book is well got up, the paper is good, and each term is printed in

[4] *Researches on Rheumatism.* By F. J. Poynton, M.D., F.R.C.P., Physician to University College and to Great Ormond Street Hospitals, and Alexander Paine, M.D., D.P.H., Director of the Cancer Hospital Research Institute, London. London: J. and A. Churchill. 1913. (Med. 8vo, pp. 472; 106 illustrations. 15s. net.)

[5] *Medizinische Terminologie.* Von Dr. Walter Guttmann. Sixth and Seventh Edition, revised and enlarged. Berlin and Vienna: Urban and Schwarzenburg. 1913. (Super roy. 8vo, pp. 1435. M. 19.)

clarendon type. British readers will be glad to find in it many popular names or local names for common maladies. The more purely scientific words are well defined and explained, especially the sesquipedalian chemical compounds so frequent in therapeutical works and in manuals on bacteriology and the use of the microscope; notwithstanding the zeal with which German anatomists once strove to give pure Teutonic names to muscles and chemical salts, we find such terms as "phenetidincitronensaure" and "methylenacetylsalicylsaure" in this dictionary. Far better are words like "methylpropylcarbinolurethran," which is at least pure bad Greek. Dr. Guttmann, we need hardly add in conclusion, includes the shorter therapeutical names in common use, as well as the long words which chemistry bestows on the numerous compounds now used in medicine and the arts.

A book on the subject of auditory re education[6] which has recently been published is, in effect, the work of three authors, Professor C. M. GARIEL, an honorary professor of the Academy of Medicine of Paris, Dr. G. DE PARREL, an otologist, and Mr. A. ZÜND-BURGUET, a former employé in a Government laboratory where experiments in acoustics are conducted. Professor Gariel indicates in a preface the broad general principles underlying the special principle described in the volume; Dr. DE PARREL sets forth the indications for anacoustic treatment and the results that may be obtained from it; and the acoustic expert, in addition to describing the construction of his instrument for imitating voice sounds of various wave lengths and intensities, and the method of using it, gives an account of several previous endeavours in early and recent times to teach the deaf to hear. This part of the book is decidedly interesting, and the whole of it may be regarded as sufficiently suggestive to be well worth perusal by aurists. But that is all that can be said for it; Professor Gariel appears to believe that atrophy is the habitual fate of organs whose function is not constantly utilized, and that this is the underlying cause of deafness; Dr. de Parrel writes in a style which is more enthusiastic than convincing, and M. Zünd-Burguet, in common with his fellow-authors, seems to fail to recognize that there is a vast difference between awakening a dormant sense of sound in a deaf-mute, and restoring ability to follow a conversation to a person who has lost it through fixation of ossicle or other like cause, and whose perception of mere noise is but slightly impaired. Summed up, Zünd-Burguet treatment would appear to amount to a method of producing tympanic massage, coupled with a clever device for ridding a patient of that habitual inattention which accounts for a percentage of the deafness of all deaf people.

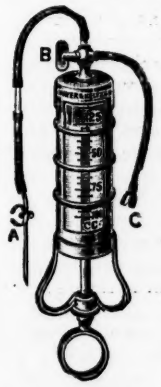
[6] *Principes d'Anacousie.* Par A. Zünd-Burguet. Paris: A. Maloine. 1913. (Demy 8vo, pp. 277. Fr.6.50.)

MEDICAL AND SURGICAL APPLIANCES.

Syringe for the Intravenous Injection of Salvarsan.

MR. HAROLD L. WHALE (London, W.) writes: Messrs. Mayer and Meltzer have made for me an apparatus which apparently has the following advantages over other syringes or funnel and tube apparatus:

1. Large capacity, 100 c.cm. For an adult dose two syringefuls suffice for neo-salvarsan, or three for salvarsan, so that the two-way tap is manipulated at most six times compared to from fifteen to thirty times for the ordinary small syringe. The resulting saving of time adds to the patient's comfort.



2. The metal cage surrounding the glass barrel protects from breakage.

3. The distal end of the barrel, including the nozzle B, is of metal; the breaking of the nozzle, so frequent with all-glass syringes, is avoided.

4. The nozzle B and all three terminals of its two-way tap are bulbous instead of cylindrical. The commonest entrances of air are thus more tightly closed.

5. The tube for drawing up the solution is weighted at C, and so lies close to the bottom of the containing vessel until the last of the solution has been drawn up.

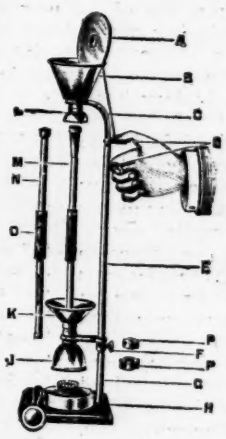
6. The needle A has no shoulders, and so can be cleaned by a wire from either end.

7. Sometimes the lumen of a needle becomes blocked by a clot of subcutaneous blood before reaching the vein, and on piercing the vein no blood can be sucked out, so that the surgeon thinks he has failed to enter the vein; after fruitless attempts he withdraws and clears the needle. This may happen several times, and during the whole undertaking this repeated puncture of the skin is the only painful proceeding to the patient. Therefore a wire stilette marked off like a Tod's Eustachian bougie has been made to fit the needle. If the blood will not flow the tube is disconnected from the needle, which is cleared without its removal from the skin. The mark shows exactly when the stilette has reached the needle point; the tube is then again connected.

8. If it is wished to let the fluid flow in merely by gravity, as from the funnel apparatus, the piston is removed and the barrel suspended by the metal hoops D.

Gum-Elastic Catheter Sterilizer.

Mr. H. T. HERRING, M.B., B.S. (London), writes: Twelve years ago[1] I published the description of an apparatus for sterilizing soft gum catheters and bougies by boiling, as well as a method whereby they could be kept afterwards lubricated and ready for future use. Since then the apparatus has been materially altered and simplified, although the principle remains the same. The principal alterations made are (1) the addition of a stand and frame to hold the catheter-case or tube during sterilization; (2) the substitution of air-tight metal caps to close the end of the catheter-case, for the india-rubber plugs; (3) a new form of case to carry funnel-ended catheters if desired.



Catheter sterilizer, with the upper section of the frame raised ready to drop over the upper end of a catheter-case. F, Lower section of frame; F, screw clip to regulate position of frame; G, rod of stand; H, base of stand; O, insulating felt on case. The other letters are explained in the text.

A teaspoonful of liquid paraffin is put into the flask, J, which is then filled with water. The lower end of a case, N, M, containing the catheter, is gently dropped into the saucer, K. The side handles, D, are pressed together, and the upper section, C, of the frame is raised sufficiently to allow the funnel guide, L, to fall smartly over the upper end of the catheter-case, M. Two metal caps, P P, are placed in the funnel, B, and the lid, A, is closed. The holder with case, now held together by gravity, is swung over a spirit or gas flame to boil. When the fluid boils the great part ascends through the catheter-case into the funnel, where it sterilizes the caps and at the same time subjects the catheter to a continuous stream of boiling water. After a minute the frame is turned away from the flame; the fluid almost directly returns from the funnel to the flask, leaving a thin coating of vaseline on the instrument. The case can now be removed by giving it a slight turn and by pressing the side handles together. The ends are closed with two metal caps. If more than one instrument is required the process is repeated, a little more water or liquid vaseline being added to the flask as may be needed. Catheters thus prepared can be easily carried about and remain sterile for a considerable period, as has been frequently proved by bacteriological examination. The tubular catheter-case for ordinary straight instruments is made in three sizes—$\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ inch diameter—and the funnel-ended one to hold any catheter up to No. 12 English. All sizes fit the socket of the apparatus. I have to thank Messrs. S. Maw, Son and Sons, of 11, Aldersgate Street, E.C., who make the apparatus, for carrying out my suggestions.

[1] BRITISH MEDICAL JOURNAL, May 25th, 1901.

DR. FRANCISCO M. FERNANDEZ, a member of the House of Representatives, introduced into the Cuban Congress on November 15th, a Bill providing for the sterilization of criminals. A considerable increase in the number of criminals in Cuba is said to have taken place in recent years.

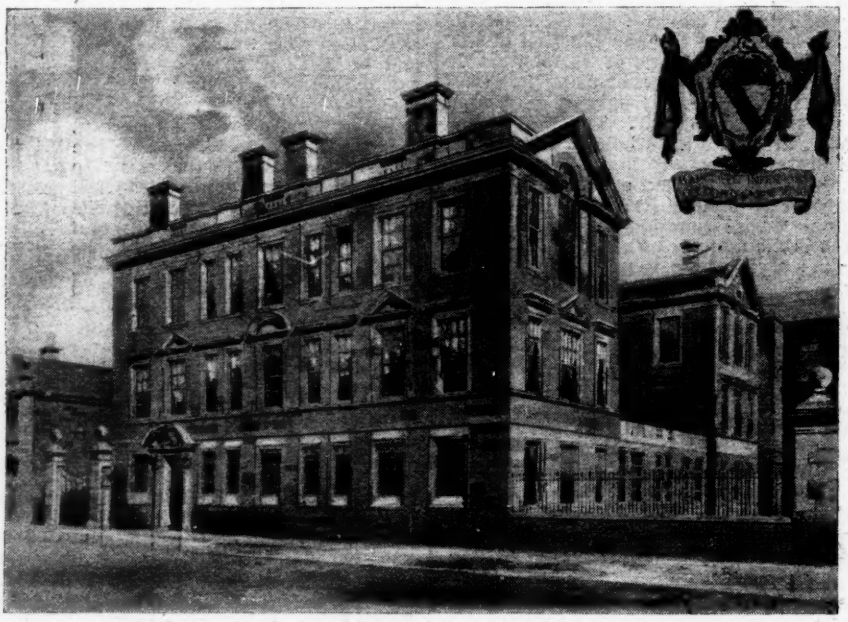
THE third biennial congress of the Far-Eastern Association of Tropical Medicine was held in Saigon in November (8th to 15th), under the presidency of Dr. Clarac, Inspector of the Sanitary and Medical Services in Indo-China. The work of the congress was distributed among seven sections: (1) Protozoology and helminthology. (2) Cholera, plague, leprosy, tuberculosis. (3) Tropical fevers, including malaria, beri-beri, dysentery. (4) Obstetrical surgery and infantile diseases. (5) Climate, hygiene and sanitary administration. (6) Materia medica and pharmacology. (7) Veterinary surgery and epizootics.

RADCLIFFE INFIRMARY, OXFORD.

Opening of New Buildings.

The new wing of the Radcliffe Infirmary, Oxford, was opened by Lord Curzon of Kedleston, Chancellor of the University, on November 26th. A luncheon was given by the Treasurer and members of the Honorary Medical Staff, at which were present nearly seventy guests, including Lord Curzon of Kedleston, the Pro-Provost of Queen's College (Dr. Armstrong), the Vice-Chancellor (Very Rev. T. B. Strong), the Regius Professor of Medicine Sir William Osler, Bart.), Sir Clifford Allbutt, Sir Henry Burdett, the Mayor of Oxford, the President of Magdalen, the Principal of Brasenose, Mr. Randell Higgins, Dr. Theodore Acland, Professor Ritchie, Dr. H. D. Rolleston, Dr. A. E. Garrod, and Mr. Edward Warren, F.R.I.B.A.

The opening ceremony took place in the new out-patients' hall at 2.30 p.m. In introducing Lord Curzon, the Treasurer (Rev. G. B. Cronshaw) gave a history of the inception of the new building, and said that the guiding principle throughout had been to make the Infirmary an efficient organization working for the benefit of the public, so that in any changes that might befall voluntary hospitals in the future, the Radcliffe Infirmary would be one which had to be reckoned with.



Lord Curzon said the present hospital owed its existence to the benefactions of two men in particular, first to Dr. John Radcliffe, whose name survived in the Radcliffe Observatory, the Radcliffe Camera, the Radcliffe Library, and the Radcliffe Travelling Fellows; and, secondly, to the late Mr. John Briscoe, a former surgeon to the Infirmary, who left the whole of his estate, amounting to more than £60,000, to the institution. Of this sum £15,000 had been devoted to the new buildings, and the rest was to be put towards upkeep. A building fund opened for public subscription had produced £9,000, bringing the total initial sum up to £24,000. For many years students of the university had received instruction in clinical work from the Regius Professor of Medicine, the Litchfield Lecturers in Medicine and Surgery, and voluntarily from other members of the staff. The facilities afforded by the new buildings would, it was hoped systematize and consolidate this instruction, which is now being taken advantage of to a greater extent by students in the year immediately preceding their entry at a London or other great medical school. Since the foundation of the Chair of Pathology an increasing number of students had attended the courses in bacteriology and general pathology under Professor Dreyer. The provision in the new buildings for a properly equipped *post mortem* room was intended to make this teaching as adequate as possible. In addition to this, the clinical laboratories would be in close touch with the department of pathology in the matter of teaching, thus preserving contact between practical and scientific pathology, which, since the earliest teaching of pathology in the university, had benefited both the university and the hospital. The newly-formed department of pharmacology would enable the student to complete within the university the more scientific and laboratory part of his curriculum at the same time as he got his first insight into the practical work of medicine and surgery. Research work in clinical subjects had in the past either been carried on under great disadvantages or rendered impossible for want of facilities. It was hoped that in the future research would be a permanent feature of the work in the new department. Besides a duty to the patients and the students, the governors felt that a central institution, such as the Radcliffe Infirmary, drawing patients from several counties as well as the city, owed a duty to the practitioners of these districts, and hoped that this would be discharged by enabling them to follow the course of their patients in the Infirmary as well as by holding a yearly post-graduate clinic.

The Regius Professor of Medicine, Sir William Osler, in proposing a vote of thanks to Lord Curzon, related several anecdotes of John Radcliffe, and emphasized the value to both of the links between university and hospital teaching. After the Mayor, the Rev. W. E. Sherwood, had seconded the resolution, Sir Henry Burdett spoke to the motion, and praised the work done by the hospital, which, he said, in 1891 had been pronounced obsolete. The opening of the new building was the culmination of many years of effort, and was chiefly owing to the treasurership being in the hands of a young man. He also urged the need under the Insurance Act of practitioners in the neighbourhood keeping in direct touch with hospital work.

Mr. Horatio Symonds, senior surgeon to the Infirmary, then asked the Chancellor to unveil a tablet to the memory of the late Mr. John Briscoe on the east wall of the out-patient hall. Mr. Symonds said that when John Briscoe was first attached to the Infirmary as house-surgeon in 1845, the condition of the institution was far from satisfactory, and he suggested and carried out even then many improvements, possibly more than any one man had done since. With the assistance of a matron, Miss Claribut, who came from the Haslar Naval Hospital, the nursing was made more efficient and the diet was brought up to the requirements of hospital treatment. Previously the patients had meat only thrice weekly and no extras, and it was said that when once a colleague, Dr. Ogle, ordered an egg for a patient it caused almost a disturbance at the weekly board meeting. In 1865 Briscoe became surgeon to the hospital and continued to improve the hygiene of surgical treatment. He was a skilful surgeon, and performed operations for the cure of stone, hernia, cataract and strabismus with success. His guiding rules in surgery were simplicity and cleanliness. He early recognized and carried out the principles enunciated by Lister. He retired from the active surgical staff in 1881, but continued to be interested in its work and progress until a few months before his death, and even when bedridden he had the lists of operations read out to him. Within four hours of his death he asked what operations were being performed on that day. Nothing would have given him greater pleasure than to know that his money was being spent in improving the efficiency of the work of the hospital.

The New Buildings.

The new buildings form a wing which occupies a site considerably larger than the former out-patient department which it replaces. It lies at right angles to the

central administrative block which formed the original hospital founded by Dr. Radcliffe. The building has been designed by Mr. Edward Warren, F.R.I.B.A., who, in the matter of the internal hospital arrangements, has been advised by Dr. D. J. Mackintosh, M.V.O., Director of the Western Infirmary, Glasgow. Professor Georges Dreyer has been consulted in the arrangements and fitting-up of the pathological department.

The new block, which is faced with stone on its northern and eastern aspects, is entirely in keeping with the substantial yet picturesque block of the older building, with which it is connected on the ground and first floors. The main façade forms the southern boundary of the open court, while its eastern façade abuts directly on Woodstock

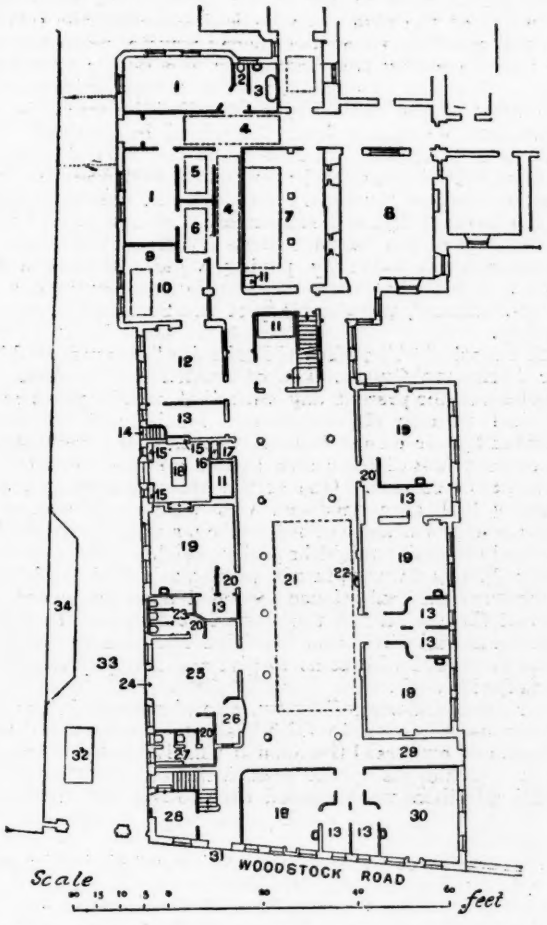


Fig. 1.—Ground floor. 1, Recovery rooms; 2, w.c.; 3, bath; 4, corridor; 5, nurse; 6, vestibule; 7, dispensary; 8, dispensary waiting hall; 9, sterilizers; 10, operating room; 11, lifts; 12, casualty room; 13, dressing rooms; 14, engineers' entrance; 15, seat; 16, ventilation; 17, store; 18, chapel; 19, consulting rooms; 20, lobby; 21, hall; 22, drinking water; 23, women's latrines; 24, patients' entrance; 25, waiting hall; 26 almoner; 27, men's latrines; 28, porter; 29, passage; 30, dental consulting room; 31, staff and students' entrance; 32, weigh bridge; 33, carriage drive; 34, bicycles.

Road. It consists of three floors and a basement. The ground floor is allotted to the out-patient department, the first floor chiefly to special departments, and the second floor to the pathological department. The basement includes store rooms, heating and freezing apparatus and mortuary, which is connected by a special lift with the chapel, on the ground floor, and the pathological department. The ground floor includes out-patients' waiting hall, six consulting rooms, casualty room, a small operating theatre, and two twenty-four-hour recovery rooms, a small dental department, and dispensary with waiting hall. A small chapel opens on to the carriage drive, which lies along the southern side of the building.

The first floor has two *x*-ray rooms for photographic and therapeutic work respectively, with the necessary dark room; two rooms are allocated to the newly-constituted electro-therapeutic department. Another room is specially fitted up as a nose, ear, and throat department. The east

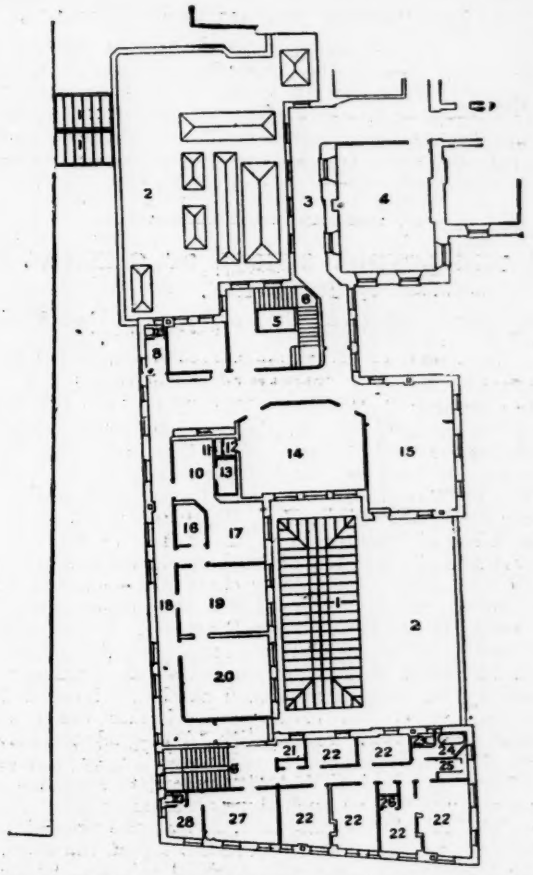


Fig. 2.—First floor. 1, Glass roof; 2, asphalte roof; 3, corridor; 4, existing staff room; 5, lift; 6, staircase; 8, patients' lavatory; 10, cooling room; 11, ventilation; 12, stores; 13, lift; 14, ear, nose, and throat; 15, electro-therapeutics; 16, dark room; 17, electric bath room; 18, corridor; 19, photographic *x*-ray room; 20, therapeutic *x*-ray room; 21, h. m. c.; 22, bedroom; 23, w.c.; 24, bath; 25, larder; 26, coal; 27, staff room; 28, staff cloak room.

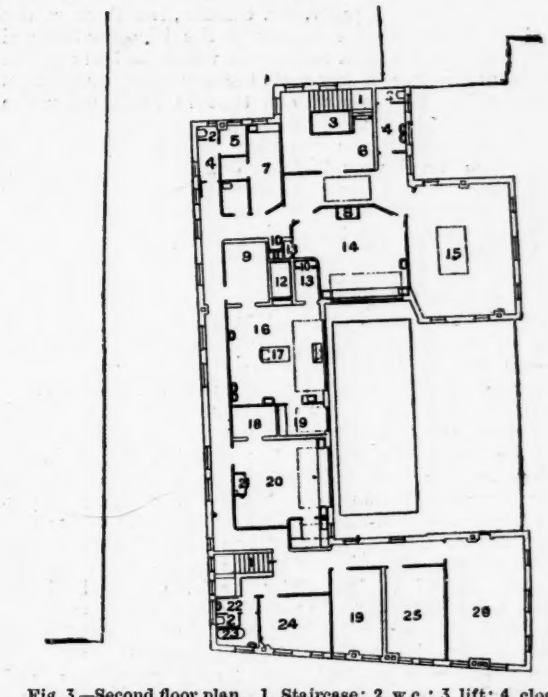


Fig. 3.—Second floor plan. 1, Staircase; 2, w.c.; 3, lift; 4, cloak-room; 5, shower bath; 6, waiting space; 7, attendants' work-room; 8, fumes; 9, trolleys; 10, cold store; 11, ventilation; 12, lift; 13, store; 14, clinical (chemical) laboratory; 15, lecture room for nurses; 16, *post-mortem* room: 17, table: 18, incubator; 19, work-room; 20, clinical laboratory (bacteriological); 21, fumes; 22, lava-tory; 23, bath; 24, professors' room; 25, instruments; 26, examiners' room and library, etc.

part of this floor is taken up by rooms and offices for the resident staff and a room for the visiting staff.

The second floor consists of a well-lighted *post-mortem* room, with microscopic room and store rooms, a bacteriological and chemical laboratory, a room for electrical work, private workroom, assistants' room, and dark room. In addition there is a small lecture room, easily accessible from the lift, and a spacious room for use as a library and as an examiner's room during university examinations.

THE LONDON SCHOOL OF CLINICAL MEDICINE.

The annual dinner of the London School of Clinical Medicine was held at Prince's Restaurant, Piccadilly, on November 28th, under the presidency of Surgeon-General Arthur W. May, C.B., Medical Director-General, R.N.

In proposing the toast of "The School," the Chairman said that doctors in the fighting services had nowadays to spend a good deal of their holiday time in keeping themselves up to date, and the facilities offered by the London School of Clinical Medicine, or, as he preferred to think of it, the post-graduate school at the Dreadnought Hospital, had been of inestimable value to them. It gave its education and the riches of its accumulated learning to a body of men who were doing great and good service not only to the navy and army, but to the country generally, as well as to humanity all over the world. It was evident by the large gathering of eminent men present that evening that the work of this post-graduate school was appreciated by the medical profession and by all interested in scientific work, but he doubted whether the general public was equally appreciative. Post-graduate schools were of recent origin, and were founded largely because it had become an axiom that with regard to medicine and surgery there was no such thing as standing still. Medicine had not always advanced, but at the present time they were on the wave, if not at the top of the wave, of an extraordinary advance in medical science. So far as he was able to judge, the clinical school was carrying on its work with enlightened enthusiasm and conspicuous success, and he felt sure that its efforts were appreciated by the men of his own service as well as by the other students it had already attracted from all parts of the world.

The toast was received with acclamation, and in the course of an excellent reply, Mr. Choyce, the Dean of the School, in expressing his thanks to the Director-General for the genial and cordial manner in which he had spoken, asked leave to state a few facts bearing upon the school's achievements. He pointed out that in 1906, when the doors of the school were first opened, there were but three students, of whom one paid no fees. Since that inauguration until now 748 men had passed through the portals. The School Committee looked on that as a good beginning. Already the accommodation was proving insufficient for the rapidly growing needs of the school; and, though new classrooms had been built, there was still inconvenient cramping of space for the work that was being done. The pathological department had more than doubled both in personnel and space. New laboratories had been opened and thoroughly equipped, but there was still too little room, and some endowment for the encouragement of research was urgently needed. It was the dream of his ambition that in the near future, through the generosity of the public, there might be established outside the hospital, but in juxtaposition to it, school buildings of such magnitude and utility as would challenge comparison with many of the well-known post-graduate medical colleges of America and the Continent. The students so far attracted by the school had come from all quarters of the globe—from Canada and the United States; from Australasia and South Africa; from Peru, Brazil, Ecuador, and the Argentine; from France, Germany, Italy, Greece, Holland, and Spain; as well as from the British Islands themselves.

The public services had been strong supporters, and especially the Royal Navy, which had sent no fewer than 127 men, or 17 per cent. of the total number of students so far inscribed on the attendance-roll of the school. Since the findings of the Durnford Commission a more official connexion than previously existed had been inaugurated by Sir James Porter. This connexion, he thought, was to the advantage both of the School and the Naval Medical Service and was peculiarly appropriate in view of the fact that the patients of the Dreadnought Hospital were all seamen of one nationality or another. Fleet Surgeon Gaskell, the able director of naval medical studies, had been unwearied in his endeavours to promote a happy and successful relation between students coming from the naval service and the teachers and staff of the Clinical School. Fleet Surgeon Bassett-Smith had also done much to promote the clinical and pathological work of the clinics. It was, however, not desirable that the school should ever become a purely service institution. He believed that to rub shoulders with civil practitioners was of immense value to service men, and he was glad to be able to put it on record that no fewer than 558 of the students who had attended the school to the present time had been private practitioners or men preparing themselves for the higher examinations. He also thought it an interesting evidence of the value of the work done so far that he was able to state that 5 students from the school had gained the M.R.C.P. of London; 11 had taken the M.D. degree at various universities; 85 had won the Fellowship of the Royal College of Surgeons of England; 13 the Fellowship of the Royal College of Surgeons of Edinburgh; and 3 the Fellowship of the Royal College of Surgeons of Ireland. The Dean concluded by paying a graceful tribute on behalf of his colleagues to the board of management and to Mr. Michelli, the Secretary of the Seamen's Hospital Society.

The toast of "The Medical Profession" was proposed by Sir Archibald Geikie, who contrasted the position of medicine at the present day with that of 300 years ago. Medical men in all directions, he said, had not only advanced their own profession, but had to a very large extent gone out of their own sphere and advanced other branches of science. One of the greatest scientists the country had ever produced was William Gilbert, the founder of the science of magnetism, a man of whom the medical profession might be justly proud.

Sir Thomas Barlow, in responding, said that the future progress of medical science depended upon the thoroughness of the training of the men of to-day, and that the London School of Clinical Medicine had laid its foundations broad and wide so as to give a thoroughly scientific basis for its work.

Sir James Crichton-Browne, who also responded, made humorous reference to faith-healing by aristocrats and others, and expressed the opinion that if the money spent upon mischievous quack medicines and advertisements relating to them were handed over to the London School of Clinical Medicine mankind at large would reap an incalculable benefit.

The health of "The Chairman" was felicitously proposed by Captain H. B. Hooper, R.I.M., and duly acknowledged by Surgeon-General May.

ROYAL COMMISSION ON VENEREAL DISEASES.

The following is the official report issued to the press by the Secretary of the Royal Commission on Venereal Diseases:

Scotland.

At the meeting of the Royal Commission held on Monday, November 24th, evidence was given by Dr. J. C. Dunlop, Superintendent of the Statistical Department in the office of the Registrar-General for Scotland.

Dr. Dunlop gave figures to show that syphilis and parasyphilitic diseases do not hold a very important place in the list of the principal causes of death in Scotland. The figures for 1911 showed that the number of deaths due to all tuberculous diseases was 8,887 (to phthisis 5,451), cancer 4,948, accident 2,624, whooping-cough 2,347, measles 923, syphilis and parasyphilitic diseases 552 (or including aneurysm 713), scarlet fever 541, diabetes 445, rheumatism 469, appendicitis 410, enteric fever 272, suicide 253.

It was Dr. Dunlop's impression, from consideration of the figures from 1880 onwards, that there was a decrease in venereal diseases in Scotland. He agreed that the

figures available with regard to deaths from these diseases were, on account of defects in certification and diagnosis, only to be accepted with reservations, and that the true amount of deaths from these causes is almost certainly considerably greater than that shown by registration; but looking to the facts that diagnosis and certification are improving, he considered that the decline which the figures showed in the number of deaths pointed to a genuine decrease in syphilis.

Dealing with the question of confidential certification of deaths, he was aware that there was a body of opinion in its favour, but he thought that from the point of view of the Registrar-General there might be practical difficulties about adopting it. A scheme under which a general certificate of death would be sent to the local registrar, and a confidential certificate giving details of the cause of death to the central office in Edinburgh, involved a risk that the latter would not receive a certificate in every case, and consequently endangered the completeness of the register.

ONE HUNDRED YEARS AGO.

THOMAS THOMSON AND THE "ANNALS OF PHILOSOPHY."

WHEN we try to picture to ourselves the medical life of a hundred years ago we must not think of the practitioner receiving every week his medical journal, or going to the reading-room of a society where there were dozens of periodicals dealing with all the specialities. There was nothing then to foretell the amazing torrent of literature which now pours forth from the periodical medical press of all civilized lands, contents of which are recorded in the pages of the *Index Medicus* (itself a monthly periodical of more than a hundred pages). No, the number of medical journals published in 1813 was not great, and those written in English and appearing in Great Britain and the United States of America could with no great expenditure of time be read conveniently each month by any diligent doctor who had access to them. It is even difficult in these days of profusion to realize how scanty were the medical magazines with which our forefathers kept themselves abreast of advancing scientific achievement.

We have already referred to some of the few medical periodicals of the time in these "Hundred Years Ago" articles. We have, for instance, quoted from the *Medical and Physical Journal*, a monthly, which began to appear in London in 1799, and continued to be published till December, 1814; its name was then changed to the *London Medical and Physical Journal*, and it pursued its course anew till 1833. There was an offshoot from it which began in 1810; it bore the name of the *New Medical and Physical Journal*, and ran by itself under the editorship of T. Bradley and William Shearman till June, 1813. We have also cited the *Medical Transactions*, published by the Royal College of Physicians of London, which appeared irregularly between 1785 and 1820, but, under the stimulus of Dr. Latham, were showing signs of unwonted activity in 1813. We have also had occasion to refer to the *Edinburgh Medical and Surgical Journal*, which, beginning in January, 1805, appeared first as a quarterly and later as a monthly for fifty years, and in July, 1855, united with the *Monthly Journal of Medical Science* to form the *Edinburgh Medical Journal*, which is still vigorous. The *London Medical Review* made its bow quarterly only from 1808 to 1812, and the long title of the *London Medical, Surgical, and Pharmaceutical Repository, Monthly Journal and Review* was not announced till January, 1814. Neither of these periodicals, therefore, was to be found lying on, say, Dr. Latham's library table in his house in Harley Street in 1813, although the annual volume of the *Medico-Chirurgical Transactions* may have been in the room. All these publications were London productions, with the exception of the *Edinburgh Medical and Surgical Journal*, which appeared in the city whose name it bore on its title-page. No other town in Great Britain in this year seems to have produced a medical journal; Liverpool was, by-and-by (in 1833), to have its *Medical Gazette*, and Manchester in 1830 was to publish quarterly the *North of England Medical and Surgical Journal;* but meantime periodical medical enterprise was restricted to the two capitals.

We had almost forgotten to mention the *Annals of Philosophy*, and we need hardly ask pardon for our impending but happily avoided omission, for truly the title of Thomas Thomson's magazine scarcely suggests a medical journal. Nevertheless the *Annals of Philosophy*, which began to appear in January 1813, and continued to arrive from C. Baldwin's press every month till December, 1820, when a new series started, and Richard Phillips became its editor, was full of medical articles and of non-medical articles from the pens of medical men. Let us consider for a few minutes this somewhat anomalous phenomenon, and endeavour to find its explanation.

The key to unlock the mystery is, it may be hazarded, to be got in the founder and editor of the *Annals*, Thomas Thomson, M.D. The editor, therefore, was a medical man. He had graduated doctor of medicine at Edinburgh in 1799. Therein lies a solution of the problem of the strong medical tincture which the *Annals* exhibited, but only a partial solution, for why did Dr. Thomson not call his periodical the *Annals of Medicine*? The answer is again to be found in the letters and titles which appeared after Thomson's name; they indicated that he was a Fellow of both the Royal Societies (of London and Edinburgh), of the Linnean Society too; we find, further, that he was a member of the Geological Society, of the Wernerian Society, and of the Imperial Medico-Chirurgical Academy of St. Petersburg. He was, therefore, a scientist as well as a medical man, a natural philosopher as much as—perhaps more than—a doctor. The title of his journal now becomes more easily understood; he was regarding philosophy as synonymous with natural philosophy, "the study of nature or of natural objects and phenomena"; he was not thinking of moral or metaphysical philosophy; and to make this quite plain he put, as the subtitle of the *Annals*, "a Magazine of Chemistry, Mineralogy, Mechanics, Natural History, Agriculture, and the Arts." Though he was thus unrestricted in the field of his journalistic enterprise, at any rate, we may still ask why he put so much that was medical into the *Annals* and did not insert "Medicine" into the subtitle along with Agriculture and Natural History? It is difficult to find an explanation, but conjecture says that Dr. Thomson had not quite determined in his own mind what was to be the scope of his magazine when he fixed the title.

Before dipping into the two volumes of the *Annals of Philosophy*, which appeared in 1813, it may be convenient to inquire into the life-history of the man who had the courage in this year of political turmoil and of stupendous military conflicts (Moscow recently in flames, incessant roar of cannon around Leipzig) to found a journal in London which should "follow the known track of sage philosophy," and to ask his fellow men to "look at her calm lights." Thomas Thomson was born in April, 1773, the memorable year when "Boston harbour was black with unexpected tea," when the brothers Montgolfier were raising their balloons by hot air, when Mr. James Boswell and Dr. Johnson ("man led about by a bear") were touring in Scotland, and Goldsmith succeeded in getting his play, *She Stoops to Conquer*, produced. He was born at Crieff, the little Perthshire town ("Montpelier of Scotland," we name it sometimes) which lies a trifle precariously on the sunny but very steep slope of its hill, looking as if a chance earthquake (and they have such seismic tremors in Strathearn) might shake it off. Crieff had got itself rebuilt after its complete destruction by fire in 1716 at the hands of the retreating Highlanders, angry men all of them, bitterly disappointed about their "Pretender" Chevalier, and ready to wreak their vengeance on the "loyal town"; and it rested there on its slopes, much indebted to James Drummond (titular third Duke of Perth) for rebuilding it and repairing its fortunes (founding a large linen factory and the like). Crieff's population in 1776 was only 1,532, but it was already a famous little place, had given birth to a poet, David Mallet (1700–1765), though perhaps rather a minor one; and here was the future editor of the *Annals of Philosophy* presenting himself to the world in one of its modest dwellings. Nowadays Crieff has spread its rows of villas and its terraces all over its sunny hillside, and away up among the pine woods one sees the large hydropathic establishment founded by another medical man (the late Dr. Meikle). On that hillside we can imagine Thomas Thomson in his youthful days playing, and looking, not unmoved, down into lovely Strathearn, or gazing, from the other side of the "Knock,"

up at the giant masses of the Grampians frowning down in rugged grandeur upon him, and containing wild horrors of fierce Highlandmen breaking through with torches to burn once more the "loyal town" of Crieff. We can think of him, too, a few years later, hurrying off to the parish school, or, it may be, "creeping like snail unwillingly" thither, with as yet no thoughts of philosophy or its annals in his head. We must picture him next at school at Stirling, then at St. Andrew's University (1787–1790), then acting as tutor in the family of Mr. Kerr, of Blackshields (1790–1795), then studying medicine in Edinburgh (1795–1799), and especially chemistry under Joseph Black, and finally taking his M.D. there (1799). Already his brain had begun to show signs of the phenomenal activity which was to make Dr. Thomson famous; he had contributed the article "Sea" to the third edition of the *Encyclopaedia Britannica*, and had edited the Supplement to that edition, writing papers on chemistry, mineralogy, and on vegetable, animal, and dyeing substances, papers which formed the basis of his *System of Chemistry*, published in 1802.[1] By this time it was clear that Thomson's love had gone out without restraint to chemistry, and the proof thereof is found in the fact that in 1800 he instituted a course of lectures on the subject in Edinburgh, and continued to teach there till 1811. More important, perhaps, is the other fact that he opened a laboratory for the practical instruction of pupils, stated to have been "the first chemical laboratory opened in the United Kingdom for purposes of instruction." About this time, too, he invented the instrument known as Allan's "Saccharometer." One is therefore hardly surprised to hear that Thomson was elected a Fellow of the Royal Society of London in 1811, although a little startled to find him publishing the next year (1812) "a history of the society, containing an account of the most important papers which had appeared in the *Philosophical Transactions*." This year (1812) was indeed an *annus mirabilis* for Thomson, for in the autumn he visited Sweden, gathering facts about its mineralogy and geology which were to appear later in a book. He took up his residence in London, and, as we have said above, began at once to edit his *Annals of Philosophy*.

So here, in 1813, we have Thomas Thomson, M.D., settled in the metropolis, making his way up and down Fleet Street and the Strand, paying frequent visits, we can well suppose, to Paternoster Row, where Robert Baldwin, the publisher of the *Annals*, had his business, and to New Bridge Street, where C. Baldwin's printing works were. But although he was living in London, he had not lost touch with Edinburgh, where, at W. Blackwood's (future publisher of *Maga*), the *Annals* could be bought, and he had stretched forth a hand across the Irish Channel to Dublin, where J. Cumming also offered the periodical for sale. Thomson was doubtless trying to live up to the sentiment which is expressed in the first sentence of the preface to the *Annals*—namely, "The superiority of the moderns over the ancients consists not so much in the extent of their knowledge (although that also is considerable) as in the degree of its diffusion." Let it be easy, therefore, for the *Annals* to be got in Edinburgh and in Dublin! Let a stray copy or two make its way even to far-off Strathearn, to enable the home folks to see what the old Crieff lad was doing in London. Perhaps, too, a part was handed in, by the way, at Stirling, at the house of a distiller there (a Mr. Colquhon), for we have discovered that in 1816 Dr. Thomson carried off as his bride Mr. Colquhon's daughter Agnes. In the year following his marriage Dr. Thomson was appointed to be Lecturer in Chemistry in the University of Glasgow, and in 1818 he was made Regius Professor in the subject; so began his long connexion with Glasgow, where, until 1845, he discharged the duties of his chair, either wholly or in part, and was President of the Philosophical Society from 1834 to 1850; in the November of that year (1850) he made the last of the long series of communications to scientific bodies which had come from his pen, and in July, 1852, he died at the age of 79. He was happy, too, in his eldest son, for Thomas Thomson, junior, who was born in Glasgow soon after his father's transference to the great city on the Clyde, graduated M.D. in the university there in 1839, and then, like his father, turned away from medical practice to the study of natural philosophy, making botany his favourite study, having strange adventures in the East, and taking a high place as a naturalist with special knowledge of all Indian matters.

[1] *Dictionary of National Biography*, vol. lvi, p. 271, 1898.

Let us now return to the *Annals of Philosophy*, which in 1813 Thomson was editing in London, and turn over the pages of the first and second volumes which appeared in that year. As has been stated already the medical element in these two volumes is very considerable, but it is nearly always medicine from the chemical standpoint, and as we have seen there was a sufficient reason for this in the personal likings of the editor. In his "advertisement" to the *Annals*, Dr. Thomson promised that every number should contain, first, memoirs on particular branches of science, either original or foreign, which "are presumed to be unknown to most of the readers of the journal"; second, a full analysis of some book of science; third, scientific intelligence; fourth, an account of the proceedings of Philosophical Societies (Royal, Linnean, Wernerian, etc.); and fifth, lists of patents and a meteorological table. The programme was a full one, but Thomson was one whose reading had made a full man, and he went joyously forward to his task with abundant perseverance and irresistible energy. As proof of his readiness and confidence in his own powers, take this sentence from his "advertisement":

> The *Annals* will contain an account of the proceedings of Philosophical Societies; this we conceive to be one of the most valuable departments of our journal; as the accounts are drawn up by the editor merely from hearing the papers read at the different societies, mistakes and inaccuracies now and then unavoidably occur; but upon the whole he flatters himself that they are tolerably correct, and they must be of value to those numerous readers who have not access to these societies.

He was ready, at the end of six months, to meet all criticisms, for he writes:

> Some complaints have been made that the number of papers in each part is too small; but we flatter ourselves that a little consideration will satisfy the intelligent gentlemen to whom we allude, that they are as numerous as is consistent with the size of the part.

We can imagine that some of the gentlemen referred to may well have muttered under their breaths (or above them), "conceited editor and most intrusive Scot." Another critic had said that too great a proportion of the *Annals* had been devoted to chemistry; the editor's reply was that chemistry, which was making such rapid progress, must necessarily receive more space than these "sciences which are in a great measure stationary." There was no repressing this "pushing young particle" of a Scottish chemist.

One is prepared, therefore, to find Dr. Thomas Thomson's name figuring pretty often in the table of contents of the *Annals*, and truly the most expectant reader could not claim to be disappointed in this respect. The first article in every one of the twelve parts, save only the ninth, is from the editor's pen; and it must be admitted that these articles, which are almost all of the nature of biographical notices of famous scientists (for example, Cavendish, Priestley, Karsten, de Fourcroy, Lagrange, Lavoisier, and Sir Isaac Newton), were thoroughly readable. But the editor contributed many other things as well as these biographical sketches. Thus we find, under his name, papers on "ulmin," on "liquid gum from Botany Bay," on the "specific gravity of the gases," on "veins" (they were geological not anatomical veins, however), on "a resinous substance found at Highgate," on "a new variety of ulmin," on "the heat evolved during inflammation of the human body," on "the Daltonian theory of definite proportions in chemical combinations," on "an analysis of a Chinese gong," on "mineralogical observations in Cornwall," and on "the composition of oxide of zinc." He also, as we have seen, gave reports of meetings of societies, wrote reviews of books, and contributed all sorts of editorial odds and ends. Some people had evidently been suggesting in circumlocutory ways that there was too much of "T. T." in the *Annals*, for we read the following announcement:

> One other topic it may, perhaps, be proper just to notice; several letters have been received mentioning the small number of contributions that have been furnished to the *Annals* by the different philosophers of Great Britain, and regretting the great weight that has fallen, in consequence, upon the Editor; but the Editor himself is of a different opinion, and acknowledges with pleasure that the number of contributions has greatly exceeded his expectation; he had laid his account with

conducting the *Annals of Philosophy* for at least a year without any assistance of much consequence, but he has been agreeably disappointed.

He was shameless, indeed, this intrusive Scot of the "loyal town" in Strathearn, not very far from Bannockburn, which perhaps explained it.

After all, however, he had some good men working with him, and he did not get what was apparently his wish—to write the whole *Annals* himself. There, for example, was Mr. John Dalton of Manchester, made famous some twenty years before by his discovery of colour-blindness ("Daltonism" it was called by Prevost, but this was objected to by the English chemists, who did not wish to "associate a great name with a physical defect"); he wrote several articles for the *Annals* (on respiration and animal heat, oxymuriate of lime, etc.). Dalton was indebted to Thomson, too, for the support he gave to his atomic theory; indeed, Thomson gave to the world (in 1807) the first detailed account of that theory, and in these very volumes of the *Annals* he was writing articles on his friend's theory which made it very widely known. Another writer was William Henry, M.D., also a chemist by inclination, although a physician by profession. He wrote articles on diabetic urine, on uric acid, on the eudiometer, etc. Then there were contributions from the pen of Berzelius of Stockholm (another M.D. with a love for chemistry which made him famous) on the composition of animal fluids, etc.; from William Prout, M.D., who took his degree in Edinburgh a year before, and was "one of the pioneers of physiological chemistry," and from Alexander Marcet, M.D., physician and chemical lecturer to Guy's Hospital, not to enumerate many others whose names have gained a place not only in the *Annals of Philosophy*, but also in the more exclusive *Dictionary of National Biography*. One cannot but be struck by the fact that Thomson gathered round him many distinguished men, even if he did say to himself about the *Annals*, "et quorum pars magna fui."

We must, not without regret, leave Thomas Thomson, as he walked out from Paternoster Row some evening early in December, 1813, carrying perhaps that month's part of the *Annals* under his arm, proudly conscious of having completed successfully the first year of his journal. "Thought I might have had to write the whole thing myself, perhaps, and I should have done it," we can imagine him saying; "would have done it," rather, for he came from the land where *woulds* and *shoulds* get mixed like the weather there. It may be that he was thinking of his old home Crieff, away in the north, far from this "brick Sahara" (as another philosopher from Scotland, the Sage of Chelsea, irreverently called London some years later), looking out on the long, rugged masses of the Grampians, snow-capped now, the month being December. It may be his thoughts stopped a little short of Crieff, at Stirling, where lived a certain maiden, to be ere long a chemist's bride. Possibly it was nothing half so romantic about which he thought, but only of the circulation of the *Annals*, and how it could be increased. But there he was, indubitably a strong man, with a marked leaning to chemistry, running his *Annals*, planning more work for 1814, saying to himself "I will succeed" (it should have been "shall"), having (all unknown to him) some forty years more of cheerful labour before him in Glasgow and elsewhere, and a resolute heart, an active brain, and a masterful spirit to carry him to his goal. *Vale* T. T.

THE late Dr. Henry Franklin Parsons, formerly of the Local Government Board, left estate valued at £3,276.

IN the *Nuova Antologia* Generale-Medico Ferrero di Cavallerleone gives an account of the measures taken for the prevention of typhoid among the Italian troops in Tripoli. The General personally began to vaccinate the soldiers in August, 1912. Up to June, 1913, the total number of antityphoid vaccinations performed was 16,191; of these 6,691 were first, 5,427 second, and 4,068 third vaccinations. In the first of these groups there were 9 cases of enteric fever with three deaths, the morbidity per 1,000 being 0.4. In the second group there were also 9 cases, but no death, a morbidity of 1.65 per 1,000. In the third group there were three cases without a death, a morbidity of 0.49 per 1,000. The morbidity during the same period among the non-vaccinated men in Tripoli was 35.3 and the mortality 7 per 1,000. Now antityphoid vaccination is being carried out in all garrisons in Tripoli.

THE UNIVERSITY OF LONDON.

By E. GRAHAM LITTLE, M.D., F.R.C.P.,
MEMBER OF THE SENATE OF THE UNIVERSITY.

THE Faculty of Medicine of the University of London on December 1st passed a number of resolutions endorsing the action of their Board of the Faculty. The question of the constitution of the Faculty which will result from the recommendations of the recent Royal Commission did not come under consideration, and we are promised another report from the Board on this subject before Christmas. As I believe this matter to be of primary importance to all the Schools of Medicine as well as to the University, and as I am convinced the members of the present Faculty of Medicine are living in a fool's paradise if they think they can blissfully ignore the Commission and all its works, I shall be grateful if you will allow me to put some matters before my fellow-members of the Faculty which I think they may not have thought out fully.

The references to pages and sections are to the Final Report of the Royal Commission on University Education in London (Cd. 6717, price 2s.).

The term "Schools" means throughout those teaching bodies which elect to qualify as Schools of the University but do not, or cannot, elect to become Constituent Colleges. The latter term is restricted to the use made of it by the Commissioners—namely, to indicate those teaching bodies which elect "to transfer all educational and financial control of their affairs to the University" (Section 119). In medicine there "cannot be more than three such colleges," but the full scheme will come into force when one such college has been established (Section 298). The list of Schools contemplated in the Faculty of Medicine is given on page 204, and includes all the present teaching schools, but these will have to appoint University representatives, chosen by the Academic Council, on their governing bodies, and generally submit to a far larger degree of University control than any to which they have hitherto been accustomed.

The measure of control contemplated by the Report may be gauged from the following statements:

> The University must be satisfied that there is no adequate and suitable provision of University instruction already existing in the locality concerned for the particular class of students whom it is proposed to teach, and it must have the power to require the co-ordination of the work of the centre with the work existing elsewhere as a condition of its continued status as a School (p. 203).

Thus it is evident that the University may bring pressure to bear upon certain of the present schools to forego some of their courses of study and thus seriously interfere with their internal government.

> In the case of a Hospital medical school . . . the Governing Body of the Hospital will appoint a committee of its own members, with the additional of University representatives, to conduct the business of the School and will always invite and receive a report from that committee before deciding any matter affecting that department of the institution (p. 203).
>
> Even in the case of teachers not appointed by the University and for whom no University title is desired the Senate will have some voice in the appointments, for example, by representation on the appointing committee (p. 203).

The Faculty of Medicine as it at present exists is to be abolished, and no other Faculty will be constituted until the establishment of the Constituent College or Colleges. Until the new Faculty is so constituted, the new "Board of Studies in Medicine" will form the unit of Government of the Schools, and this Board will report directly to the Senate (section 384). When the New Faculty comes into existence, the Board will not have the right of direct access to the Senate, but will have to report to the Faculty.

The constitution which the Report proposes for the Schools, not being Constituent Colleges, is as follows. The Board of Studies in Medicine shall form a committee of itself, subject to the approval of the Senate, to prepare Curricula and Syllabuses, etc. This Committee shall report to the parent Board of Studies; the Board of Studies shall in turn report to the Faculty of Medicine, which when constituted shall consist of the "University Professors and other Teachers of standing in the University Medical Colleges which would be Constituent Colleges." "Some eminent members of the profession who were not

teachers in these colleges" might be co-opted, but this right must "be sparingly exercised," and need not be exercised at all. (Section 305.)

The powers of the Faculty thus constituted are detailed on page 53. It shall have the power generally "to determine the conditions for the award of degrees, diplomas, and the course of study to be pursued by students of the University within the Faculty."

The Faculty will report to the Academic Council, which will consist of the Deans of the Faculties, and eight other members of the Faculties, elected in common session. The Vice-Chancellor is *ex officio* chairman; with this exception all the members, we may be sure, will be members of the Constituent Colleges. The Academic Council will have large executive powers in educational matters, including the recognition and visitation and University control of Schools.

The Academic Council reports to the Senate, on which it has two representatives out of fifteen members. The Senate transmits its instructions to the Schools through a special committee to be appointed by the Senate (Section 400). This committee is "to supervise curricula and general examinations in the Schools," but "it is not to be constituted so as to represent institutions or particular classes of students." This committee, which I shall call for short the "Scholastic Council," though it is not given any distinguishing name in the Report, is comparable to the Academic Council, in that in those branches of study in which there are no Faculties this Committee receives reports which, if there were a Faculty, would be transmitted to the Academic Council. The Scholastic Council might very well be strengthened so as to perform for the Schools the functions which the Academic Council performs for the Constituent Colleges. The Scholastic Council communicates its findings to the Board of Studies, which I have called the "unit of government of the Schools." (It must be carefully borne in mind that the meaning given by the Report to the term "Board of Studies" differs from the meaning which that term has had in the past.)

The constitution of all the bodies concerned makes the procedure very inconvenient and unfair for the Schools, as compared with the procedure which is to be adopted for the Constituent Colleges.

The Board of Studies is to consist (Section 384) of the "principal teachers in the Schools of the University"; it is therefore entirely comparable to the constitution of the New Faculty, which will consist of the Professors, Readers, and some Co-opted Teachers of the Constituent Colleges; but whereas the Faculty, consisting of Teachers at the Constituent Colleges, reports direct to the Academic Council, also consisting of Teachers at the same Colleges, the Board of Studies reports direct to the Faculty—*that is, to a body of persons with a direct financial and personal interest in hastening the transfer of all students for Oxford, Cambridge, or London degrees from the Schools to the Constituent Colleges.*

As the statement I have italicized has been questioned, perhaps I may be allowed to substantiate it. It must be remembered that the Commissioners allowed the Professor a limited amount of private practice, but they did not mention the means by which limitation could be enforced. In many branches of medicine it is obviously impossible to fix the hours during which the professor may respond to the calls of his patients. A man with appendicitis, a woman in labour, a child with a doubtful diphtheritic throat, cannot await the convenience of the surgeon, the obstetrician, and the physician respectively. Limitation could not, in fact, be enforced, and this consideration influenced the Board of the Faculty in the unanimous vote which they recorded that the Professor should not be allowed any practice at all. But the Commission's recommendation holds the field, and while it does so it is obvious that it is to the Professor's pecuniary interest to attract as many students as possible to his classes. The prestige of the college and of its teachers will to a large extent depend on the number of students which attend it.

As the Dean of the Faculty of Medicine very pertinently observed, the Commissioners make a division where no division existed before. University students studying at the Colleges are to be sharply differentiated from University students studying at the Schools; they are to be branded as separate even after they have graduated; for graduates are required to add to their degree the name of the College or School at which they studied. The cumbrous and absurd titles which will result from this regulation do not seem to have touched any sense of humour in the Commissioners.

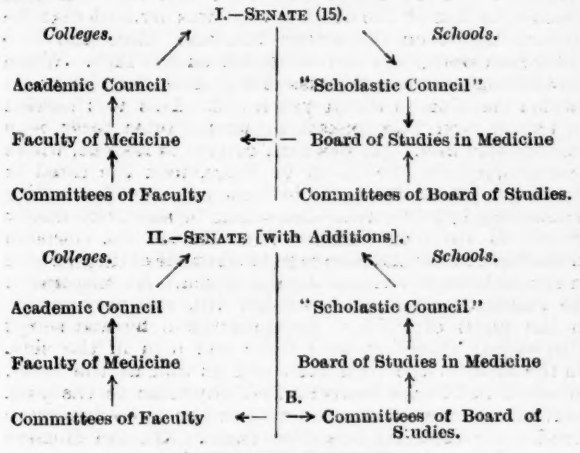
But the dualism which the Commissioners introduce is not even a fair dualism, for the dice are heavily loaded in favour of the Constituent College and against the School. I have shown how the constitution favours the College. But another most important privilege is reserved for teachers in the Colleges and is not accorded to teachers in the Schools, in that the teachers at the Colleges examine their own students; but this is not the case with teachers at the Schools. For example, if three colleges, A, B, C, are constituted, the examinations are differentiated at A, B, and C respectively. But if X, Y, Z are Schools of the University, the same examination must be taken by each of these individual schools; that is, the teachers will not examine their own students. Moreover, the examination held at the Schools will be controlled by the Faculty, and the Academic Council, that is by the teachers at the Constituent Colleges.

The President of the Board of Education has clearly indicated that when a bill has been submitted by the Departmental Committee at present sitting, the bill will be made a Government measure, and will presumably be backed by the present coalition majority. It may then be asked, "What is the use of kicking against the pricks?" and it may be questioned whether the present Faculty of Medicine can do anything to save the situation. I believe that it can, but not without combination with other Faculties and not without exerting itself to the utmost.

There is a proposal now being discussed in other Faculties, and notably in the Faculties of Arts and Science, by which, if the Report of the Commission is pushed, certain modifications may be obtained which will remedy to some degree the more glaring injustices of the changes recommended by the Report. My chief purpose in writing this communication is to lay before your readers the modification suggested. To put it as briefly as possible, the Faculty is urged to demand that the privilege of reporting direct to the Senate, through the special committee to be appointed by that Body, which I have called the "Scholastic Council," shall be retained permanently, and shall not be given up, as the Report suggests, when the New Faculty of Medicine comes to be constituted.

The effect of this modification will be best understood by reference to the diagram (p. 1499). Scheme I represents the proposal of the Commissioners which will come into operation as soon as a Constituent College, and thereby the new Faculty, comes into being. By this scheme any report from the Board of Studies must be submitted to the Faculty, and this report follows the course indicated by the arrows in the diagram, until the instructions of the Senate come back to the Board of Studies via the "Scholastic Council." As the "control of the teaching and examining work of the University should as far as possible rest with the Faculties" and "only the control of finance and administrative business rest with the Senate" it is obvious that in most cases affecting the Schools the Senate will do little more than transmit the judgements passed by the Faculty and Academic Council. It is surely unjust to require that "the principal teachers in the Schools" shall have to submit, in all their arrangements for teaching and examining their own students, to revision by a body of competing teachers of no higher status than themselves, but who happen to be teachers in a Constituent College. The scheme marked II represents the procedure which the Commission recommends as provisional until the new Faculty is established. By this scheme the Schools have direct access to the Senate via the "Scholastic Council," and the proposal to which I am inviting the attention of the present Faculty is that when the Constituent College and the new Faculty make their appearance, the affairs of the Constituent College shall be managed by the Faculty and Academic Council (subject to the final authority of the Senate), and the affairs of the Schools shall be managed by the Board of Studies and the Scholastic Council, which should be strengthened by representation from the Schools in the same measure as the Colleges are represented on the Academic Council. The "Scholastic Council" will be to the same degree under the authority of the Senate, and this Council should have the

same representation on the Senate as the Report concedes to the Academic Council. The subordination of the Schools to the Colleges which is contemplated in the Report thus disappears. If it is thought advisable to have contact between the Schools and Colleges, this might be arranged by the common session of the Committees of the Faculty and of the Board of Studies (indicated in the diagram by the double-pointed arrow, B). This would mean an interchange of views on an equal basis; and the common outlook thus obtained would usefully leaven both the parent bodies to which these Committees report. If it be objected—and the objection has been made—that this is to separate the Colleges and the Schools into watertight compartments, the answer is that the Commission has so decreed it, and it is useless to attempt to override their Report. All that can be done—if, indeed, that little is possible—is to correct the most obvious inequalities; and I repeat that it is only by concerted action by as many Faculties as may be practicable that even this may be achieved.



SCIENCE NOTES.

CARNOTITE, a yellow mineral found in sandstone in Western Colorado, would appear to have become one of the chief sources of radium. It occurs usually as light yellow specks disseminated through the sandstone or as yellow incrustations in the cracks or pockets. It appears from an article in *Science* of October 31st that the carnotite so far obtained in Colorado has been exported to Germany or France, and that the price of radium has been fixed by the European manufacturers. A National Radium Institute has now been formed to work in association with the Bureau of Mines at Denver, Colorado, and the technical operations will be guided by the scientific staff of the bureau. Carnotite is a hydrated vanadate of uranium and potassium, and the institute proposes not only to collect radium, but also to study the separation of uranium and vanadium. All processes, such as the details of apparatus and plant, will be published for the public benefit, the main object of the institute being to procure enough radium to conduct extensive experiments in radium-therapy, with special reference to the treatment of cancer; chemical and physical investigation will be carried out also. Professor Soddy, in commenting on this scheme in *Nature* of last week, expresses the opinion that apparently the question of the supply of radium, in whatever country it is found, will be regarded more and more as of national importance, and that a nation trusting to the equitable operations of the laws of supply and demand is likely to be squeezed out. He therefore considers it to be a matter of public interest to this country, and that it should be lifted once for all above the plane of private venture and financial speculation. He appeals to the Institution of Mining and Metallurgy in this country to appoint an expert committee mainly of practical mining authorities, but with representatives of technical chemistry and medicine, to consider the situation and take energetic steps to meet it.

It having been shown that the serum of normal dogs contains a ferment capable of splitting up a peptone prepared from dogs' muscle tissues, experiments were extended by Pincussohn and Petow (*Biochem. Zeitschr.*, October 28th, 1913) to other animal serums to see if animals possessed in their serum specific ferments to their own tissue-peptones. Abderhalden has very successfully demonstrated that in pregnancy there is a ferment action elaborated against the proteins and peptones of the placenta, and the practical application of his findings is now well known. He has used two methods, one, the dialysation method for the demonstration of proteolytic action of the pregnant serum, and the second, the optical method for its peptolytic power. The "guardian ferments," as they have been called, obtained by these methods are probably not identical; they do not correspond, for example, to trypsin, which has, combined in itself, both a proteolytic and a peptolytic power. Observers have noted a discrepancy between the two methods. In general, normal serum does not degrade organ protein. It must be assumed that within the body useless protein, that is, from functionless cells, must somehow be degraded through peptones to amino acids, but this is probably brought about by an inherent autolytic property in the cells. The blood acts as a vehicle not merely for free amino acids, but in all probability also for larger complexes, and it would seem reasonable to imagine that there must normally be guardian ferments capable of converting possibly harmful complexes into innocuous fractions. The authors have attempted with success to discover whether the normal serum of animals of certain species have the power of breaking up peptones from organs of that particular species in a specific manner. They employed peptones obtained by partial hydrolysis with sulphuric acid from the muscle tissues previously washed quite free from blood, and the ferment action of the tested serum was indicated by the rotation observed in the polariscope. It was found that the serum of various animals acted only on peptones of the particular species, but not on those of foreign species, and that no action was called forth in the case of more completely hydrolysed or indifferent peptones. It was noted, however, that dogs' serum degraded the peptone derived from fox muscle, and vice versa, and, from other indications also, it was clear that generic relationships of animals were reflected in the action of their peptolytic ferments. One very striking and important phenomenon was brought to light, namely, that the blood serum of normal guinea-pigs has a general peptolytic power, as Abderhalden had previously hinted, for it was found that this animal's serum acted on peptones derived from other species, and if further investigations support this observation, we shall have to consider whether guinea-pig's serum contains a plurality of ferments or a universal ferment against different peptones. In practical work on immunity we employ mostly (almost exclusively) guinea-pig serum as a source of complement, and the question of plurality of complements is an old battle-ground. The experiments lend support to the view that serum complement and serum ferment have much, if not all, in common; and it will be safe to predict that the observations of the authors will stimulate further research into the question.

Human milk, on chemical analysis, differs in three important ways from cow's milk: It contains much more lactose and much less protein and a greater percentage of substances of an unknown nature with little or no nitrogen in their composition. Meigs and Marsh (*Journal of Biological Chemistry*, October, 1913) have investigated these differences. Before any comparison of the two kinds of milk can be made it must be borne in mind that the composition of milk varies according to the period of lactation, and thus average figures are unsatisfactory. They find that from the beginning of the second month of lactation onwards the limits of normal variation are, for human milk, 2 to 4 per cent. fat, 6 to 7.5 per cent. lactose, and 0.7 to 1.5 per cent. protein; and for cow's milk 2 to 4 per cent. fat, 3.5 to 5 per cent. lactose, and 2.5 to 4 per cent. protein. These figures represent percentages of whole milk. With regard to the other constituents of both, the chemical nature of which is as yet unknown, they appear to be important constituents of diet. They contain little or no nitrogen, and are soluble in alcohol and ether. They are in greater abundance in human milk during the early periods of lactation, and gradually diminish as lactation progresses. Thus, in the

early stages they constitute as much as 1 per cent. of the milk, falling to half that amount from the middle period of lactation. In cow's milk from the middle period there are about 0.3 per cent. of these unknown substances.

LITERARY NOTES.

A FOURTH volume of the series entitled *Moeurs Intimes du Passé*, by Dr. Cabanès, editor of the *Chronique Médicale*, has just appeared. It deals with student life in Paris from the beginning of the thirteenth century to the present day. The book is published by Albin Michel, Paris.

Our German friends pride themselves, not without good reason, on their accuracy. But they, like Homer, sometimes nod. A few weeks ago, in one of the leading medical journals of the Fatherland, reference was made to an action which it was said had been brought by Miss Lind-af-Hâgeby against the Editor of the BRITISH MEDICAL JOURNAL. In the Vienna *Medizinische Klinik* of November 30th, we read in a paragraph of news from London that "they (the antivivisectionists), not discouraged by the failure of their leader, Lind-of-Hogeby (*sic*), in a libel action against the Editor of the BRITISH MEDICAL JOURNAL, Dr. Sluby (*sic*)—he had accused the antivivisection league (*sic*) of deliberate lying—they almost daily hold meetings in which their old parrot cries are repeated." There is a fine derangement of epitaphs here, but we are inclined to take it as a testimony to the part we have played in the battle against antivivisectionism that it should so readily be assumed that we were the defendants in such an action as that brought by Miss Lind-af-Hageby against Dr. Saleeby and the *Pall Mall Gazette*. We can only express our sympathy with Dr. Saleeby on the undesired honour that has been thrust upon him.

From the *Remedy* of the Persian poet Saadi, known also by the name of the *Bed of Roses*, the *Mercure de France* in a recent number reproduces various passages translated by Franz Toussaint. Among them is the following: A man contracted a disease of the eyes. He hastened to a veterinary surgeon and said, "Give me a remedy." The "vet." instilled into his eye a collyrium which he used for the eyes of animals, and the poor fellow became blind. The affair was taken before the Cadi, who gave judgement as follows: "The veterinary surgeon will not be fined. If this patient had not been an ass he would not have consulted such a practitioner." Whereat, we suppose, there was laughter in court which was at once suppressed. We hope the judicial wit satisfied the plaintiff. The moral drawn from the story by Saadi is that an intelligent man does not entrust difficult tasks to an incompetent person. Although the maker of mats can weave, he is not considered fit to do delicate work in silk.

In the recently published *Life of Henry Labouchere*, by Algar Labouchere Thorold, we read:

> Labouchere when young went to Marburg to reside in a German family for the purpose of acquiring conversational fluency. . . . While there he frequented the hospital and attended the lectures given for the instruction of the medical student. He was always fond of developing extraordinary theories on the subject of medical science more remarkable for their originality than for their probable ultimate utilities. The authority upon which these theories would be based was invariably that of the lecturer at the Marburg hospital. Even as late as 1905 Mr. Labouchere still remembered his medical student days. So wrote to one of his sisters in that year on the occasion of her son becoming a doctor. "A doctor is a good profession. I learnt doctoring at Marburg in order to learn German. I rather liked it, and have vainly offered to doctor people gratis since then, but no one seems inclined."

Long afterwards, however, we find "Labby" giving medical advice to one of his staff. Perhaps it is owing to the impress thus given to *Truth* by its founder that it has continued to give attention to medical matters even to the present day. Its oracular utterances on these subjects are amusing if not always edifying.

A. Corlieu, in a study of the last days of Richelieu, says the Cardinal was a tall, thin man of nervous, bilious temperament. He died at the age of 59. He had been drugged, or drugged himself, to an extent almost beyond belief by us in these days. In one year (1635), when he was 50, he took seventy-five enemas, and one hundred and twenty-seven boluses of cassia, without reckoning laxative medicines prepared by his apothecary, the bill for which was 1,401 livres, 14 sous. He was used up by the strenuous life he had led. About the middle of August, 1642, Richelieu fell ill. For some time abscesses formed in the right arm, so that he could not write. The arm had wasted considerably, and when he dictated his will on May 23rd, 1642, the notary signed for him. Besides these abscesses, which had to be opened, he had ulcerated haemorrhoids, which prevented his riding in a carriage. Montchal, Archbishop of Toulouse, who did not like him, reports in his *Memoirs* that the Cardinal's hand was rotten, as a consequence of a disease called *carbunculus*. He added the qualifying word *Narbonicus*, doubtless by way of allusion to the town of Narbonne in which were arrested Cinq-Mars and de Thou, who were tied up in a boat attached to that of the Cardinal. It was by boat that he reached Lyons on September 9th, and there the two young men were tried and beheaded on the 12th. While the Cardinal was at Lyons there was made for him a vast wooden machine in which was a bed. This was carried by twelve men who took it in turn. Some forty men accompanied him. He was thus carried to Roanne, where he embarked on the Loire to Baire, took the canal to Montargis, joined the Loing to Nemours, travelled by his machine again to Fontainebleu, where he slept, and finally arrived in Paris on October 7th. He left St. Germain on the 26th in his machine to go to his castle of Rueil, where on the 30th he was visited by the Queen. He returned to the Palais Cardinal on November 4th, still very unwell. In the night of Friday, November 28th, he was seized with violent shivering, with fever and pain in the side. On the 30th, as the pain increased as well as the fever, he called in Charles Bouvard, first physician to the king. Bouvard was a great bleeder, and in the night Sunday to Monday the Cardinal was bled twice. On the Monday morning there was some improvement, which did not last long, for on the afternoon of the same day the fever increased; there was spitting of the blood with difficulty of breathing. The case was evidently one of pneumonia. After some further bleedings on December 2nd there was a consultation of physicians, who naturally approved of what the first physician had done, and decided on purgings and further bleedings. Wishing to know his exact state, Richelieu begged the doctors to tell him the truth; but they answered vaguely, saying that God could work a wonder to preserve him, but that they could give no definite opinion before seven days. Chicot, one of the king's physicians, being called privately, told the patient that he would be dead or cured in twenty-four hours. The Cardinal understood, but submitted to more bleedings and even took a pill prescribed by a quack who was called in. This seemed to do good, but about midday on December 4th he died quietly. The skull was opened and the brain examined. According to the report, all the organs of understanding were doubled and trebled; by this probably nothing more was meant than that the brain was remarkably developed. Like Napoleon, Richelieu had a brain which worked in separate compartments. If Richelieu shed a good deal of human blood it may be said that his doctors punished him in the same way. It was the age of bleeding and Bouvard was a great bleeder even for that day. He is said to have bled Louis XIII forty-seven times in one year, and Gui Patin in one of his letters says that he bled sixty-four times in eight months his nephew Cousinot, a doctor, for acute rheumatism. Another doctor, Jacques Mentel, was bled thirty-two times for a continuous fever. Patin himself was bled seven times for a bad cold, and Brayer eighteen times for a malignant continuous fever.

In the October number of the *Journal of Anatomy and Physiology*, Mr. F. Wood Jones, D.Sc., deals with some points in the nomenclature of the external female genitalia. Seventeenth century writers used a multitude of words to designate these parts. One of the popular terms, says Mr. Wood Jones, is worthy of some note. Helkiah Crooke (1651), after giving a long list, concludes, "We will call it the lap." Mr. W. Rutherford contributes a note entitled "A Swedenborg Mystery: The Rival Skulls."

British Medical Journal.

SATURDAY, DECEMBER 6TH, 1913.

THE FUNCTIONS OF THE COLON.

For some time past the surgery of the colon has looked large in the minds of the profession. They have read with some amazement of the long train of diseased conditions laid at the door of intestinal stasis, and with not a little scepticism of the results of exclusion of the colon by short-circuiting or by more or less complete removal. Apprehension that perhaps Nature has blundered in providing man with a great intestine at all may yield to comfort of mind on further study of its physiology. We are glad to be able to invite the attention of the profession to some fresh thoughts on the great intestine and its work which are embodied in an address to the Cambridge and Huntingdon Branch by Mr. Joseph Griffiths, published in this issue. The comparative anatomy of the great intestine in vertebrates, with which the first portion of the paper deals, is of great interest, but for the moment may be passed by. That function of the colon which is best known is the absorption of water. Those acquainted with the enormous quantities which may be absorbed by the "Murphy drip," an American term (or shall we say slang?) for "proctoclysis," will readily accept the high percentage suggested by Mr. Griffiths. The mechanical arrangement of the viscus provides for very considerable slowing of the intestinal stream. In association with that a process of mixing goes on, being brought about by eddying and churning combined. Probably all this takes place in the first and second portions of the great bowel. The rest of it is concerned with moulding the contents for the final expulsive act, and by the time this stage is reached the faecal material is innocuous. Before faeces are rendered thus harmless some specific chemical substances, Mr. Griffiths thinks, are formed by the fermentative changes proceeding in the first part of the colon, and these are absorbed. If these bodies are maintained in their due proportion, the individual is—as the athletic Englishman likes to put it—"fit and well"; if they are too scanty or too profuse, then the individual is otherwise than in "the best of health and spirits." When this is translated into the language of the agriculturist, it means that the "bloom" in cattle is maintained just so long as the alimentary canal is acting normally and regularly. The evidence that such substances are produced in one part of the colon and absorbed again from a more distal part is so far indirect. Mr. Griffiths supplies no new evidence, nor does he suggest any good physiological purpose that may be served by that mischievous worm, the appendix. It may be recalled that Sir William Macewen has seen coming from the appendix a secretion in little jets which mixes with the chyme as it reaches the caecum. What this secretion does is not known. It has been suggested by him that its function may be digestive (and so it may contribute to the formation of these chemical substances mentioned by Mr. Griffiths), or that the appendix may be a culture chamber for the *Bacillus coli* with which the caecal contents are here impregnated or infected.

Intimately bound up with the changes in the contents of the great intestine is the question of the normal movements of the bowel. Radiography has opened up an entirely new field and has demanded revision of our ideas in this region just as much as in the stomach. Dr. Arthur F. Hertz[1] has recently published some new observations which may not be known to the whole body of the profession, but have a very direct connexion with Mr. Griffiths's ideas on the function of the colon. It is now acknowledged that the ileo-caecal valve is a sphincter which exists for the purpose of preventing the too rapid passing of the contents of the ileum into the caecum; that a physiological stasis takes place at the termination of the ileum; and that the emptying of the collection of chyme into the caecum occurs in spurts during or immediately after meals through a gastro-iliac reflex. Spasm of the sphincter, with consequently increased stasis, may occur in peritonitis and appendicitis. Examinations of the colon by the bismuth meal invariably showed it to be immobile, and it was concluded that a very slow peristalsis is the mechanism by which the contents are propelled onward.

The churning and mixing processes described by Mr. Griffiths are brought about by contractions of the muscular walls of the sacculi—the circular fibres—but these do not propel onwards. Now Holzknecht, Barclay, Newton, and Hertz have all observed, on very rare occasions considering the large number of examinations made, that "under natural conditions the passage of faeces along the colon is mainly due to a rapid movement along a considerable length of bowel repeated three or four times each day." This movement is most likely a big powerful peristaltic wave; Holzknecht thought that in one case in less than three seconds some faeces passed along about twelve inches of the colon. The stimulus to this movement is similar to that in the terminus of the ileum, and comes from the entry of food into the empty stomach—the gastro-colic reflex.

Sufficient indication has been given to show that a vast deal of highly interesting work is being done in filling in the gaps in physiological knowledge. Our ideas on the motor functions may now be regarded as fixed. Chemistry and bacteriology have to take up the burden. Surgery has shown that people can live without a great intestine. But it does not seem too much to hope that "the state of physiological cleanliness," the maintenance of which, in Mr. Griffiths's words, is our great problem, will be preserved by scientific attention to our bodily drainage system rather than by the most brilliant surgical technique.

VOLUNTARY INSURANCE.

AN appeal has been issued by the Insurance Tax Resisters' Defence Association, to which Lord Mowbray and Stourton is honorary treasurer, at 9, South Moulton Street, London, W., "to establish a substantial voluntary act campaign fund to defray the cost of literature, meetings, and other expenses." The appeal states that the association is the only organized body that exists for the specific purpose of abolishing the compulsory character of the Insurance Act. It maintains that the monetary advantages of the measure are insignificant compared with the humiliation of its compulsory character. The association's confession of faith is

[1] *Journal of Physiology*, vol. xlvii, Nos. 1 and 2 (October 17th, 1913).

contained in the statement that the Act "is based on a fundamental injustice which no talk of benefits can obscure or remove—the injustice of dealing differently with rich and poor. Under the Act compulsory thrift is imposed on the poorer citizens and not on the well-to-do. Compulsory registration is imposed on the working classes and not on the employers of labour. The wage-earner may not work or live without his card or official licence, while no such condition attaches to the lives or work of persons possessing private means."

It is claimed that the simple remedy lies in making the Act voluntary, and that for this policy the association has the support of a large number of members of Parliament. It is stated that it includes among its members persons of all political opinions, and will conduct its campaign on independent lines, giving its support to any parliamentary candidate who will pledge himself to work for the voluntary amendment. The signatories to the appeal undoubtedly comprise persons reputed to hold opinions of very various colours on social questions, but it is to be observed that the list of members of Parliament who have declared their intention to support the proposal to amend the Act on voluntary lines contains thirty-eight names, and that thirty-six are Unionists.

It will be very necessary for the medical profession to watch the proposed campaign, carefully and coolly, so as to have formed its opinion before any overt action is taken. It will not consent to be used as a pawn in a game between two political parties both playing to the gallery of voters.

The thirty-six Unionist M.P.'s are ready to go faster, and perhaps further, than their leader. Mr. Bonar Law said at Norwich that if a Unionist Government comes into power it will "appoint a committee—as far as possible non-political, impartial, and competent—which will examine into the whole subject, not only into the working of the Act, but into the whole principle of the Act, and will consider this: whether or not it is possible, and whether it is in the interests of the nation, even yet to turn it into a voluntary system." This, it will be noted, amounts to no more than a promise to consider the desirability of converting the National Insurance Act into a voluntary system.

It would be rash to attempt to foretell what the result of such a conversion would be, for the consequences of social legislation are nearly always much wider than its proposers expect, and not infrequently very different. Two or three conjectures may, however, be hazarded. In the first place the Resisters' Association appears to expect that "those who cannot afford to insure, and who now do so under compulsion at the cost of their daily necessaries," would drop out, for it considers that for them "some wise and generous provision should be made." By this a charitable provision may be meant, but it is doubtful whether this would be considered better by the poorer classes themselves or by the public at large than the present system, by which the less provident are obliged to contribute a portion of the money which forms the insurance fund.

In the second place, it is possible that the insured classes at the other extreme, those who before the Insurance Act were in the habit of paying for medical attendance as private patients, would also drop out from a voluntary scheme, thus automatically settling the difficulty now existing as to persons who wish to make their own arrangements.

If these two classes were eliminated there would be left the intermediate class of insured persons who before the Act belonged to friendly societies, trade unions, or insurance companies, and it would be difficult for any Government to resist a demand of the friendly societies for the institution of contract practice under their direct control. Actuarial evidence would be needed to show whether a system thus deprived of large numbers of its contributories could remain a sound going concern without much more State help.

The whole proposal is nebulous; it is an example of political "kite-flying," with the kite among the clouds. In its present stage it is impossible that the profession should not feel very grave doubts about the policy and feasibility of the project. The Special Representative Meeting in May-June, 1911, while taking exception to many of the provisions of the National Insurance Bill, approved its main object. It will not be disputed that the main object of the Bill, approved at that time by practically the whole House of Commons, was to provide insurance benefits for all sections of the wage-earning classes. Insurance was therefore made compulsory. It may be that Parliament was carried off its feet by the persuasive tongue of the Chancellor of the Exchequer, and that many members of Parliament are now reconsidering their attitude towards the compulsory basis of the Act, but the profession must look at this matter from the professional point of view, and ask itself the question whether a voluntary system of insurance—that is, one in which the wage-earner would be allowed to choose whether he would join or not, and, if he did, for what benefits he would subscribe—would on the whole be an improvement on the present system. It might very well happen that a large section of the thrifty classes in receipt of good wages or salaries, instead of seeking to make their own arrangements, would take advantage of the scheme as providing security against doctors' bills. This is the very class which the Association sought to exclude by an income limit. On the other hand, the shiftless and the ill-paid worker constantly on the poverty line, who used seldom to pay a doctor, but took advantage of private medical charity, of the Poor Law, and of the voluntary hospitals, would probably refuse to join a voluntary system. If this occurred, the very class whose inclusion in a compulsory system the whole profession welcomed might again become a source of loss and vexation to it. The Resisters' Association gives no indication whatever of the nature of "the wise and generous provision" to be made for this class. Until this is disclosed the material for forming an opinion hardly exists, but we shall be glad to have the advantages and the disadvantages of the proposal discussed from a medical point of view.

EUGENICS IN ANCIENT GREECE.

DR. M. MOÏSSIDÈS, of Constantinople, editor of the Greek medical review, *Hippocrates*, has described in a recent number of *Janus* the measures adopted by the ancient Greeks to secure the health and vigour of the race. These show that they were a good deal more advanced and more thoroughgoing in the application of eugenic doctrine than we are even at the present day. Great attention was given to the matter by statesmen and philosophers, as well as physicians, and a keen interest in the matter was taken by women. In the regulation of marriage, careful selection, natural and artificial, was recommended by the great thinkers of ancient Greece, and this was enforced in some places with excessive rigour. In Crete the handsomest and most robust

of each stock were compelled to intermarry, with the object of perpetuating a fine type. It was recognized that puericulture before procreation was the most important part of eugenics. Lycurgus forbade unions which might imperil the vigour of a military people or taint the purity of an aristocratic race. A heavy fine was imposed on King Archidamus because he had taken to wife a woman of short stature, and thus risked giving to Sparta "kinglings in place of kings." The authority for this is Plutarch, in his treatise on the education of children. The same author, in his life of Lycurgus (North's translation), says that, "Beginning afar off, he first considered the state of marriage and the generation of children. . . . First of all he willed that the maidens should harden their bodies with exercise of running, wrestling, throwing the bar, and casting the dart, to the end that the fruit wherewith they might be afterwards conceived, taking nourishment of a strong and lusty body, should shoot out and spread the better; and that they, by gathering strength thus by exercises, should more easily away with the pains of childbearing." The child was inspected after birth by the elders among his kindred, and if they found him "deformed, misshapen, or lean, or pale, they sent him to be thrown in a deep pit of water which they commonly called Apothetas, and as a man would say the common house of office; holding opinion it was neither good for the child nor yet for the common weal that it should live, considering from his birth he was not well made nor given to be strong, healthful, nor lusty of body all his life long."

Plato in his *Laws* says "the State alone should regulate marriages, not according to the will of the parties, but solely in view of the general good of the nation." He held that it was the duty of the magistrates to choose the bravest men and the most beautiful women so as to obtain specially good offspring. Aristotle wrote to the same effect.

Although not exactly agreed as to the proper age for marriage, all the Greek authors condemn unions between parties either too young or too old. Too early marriage was considered very injurious for the species as well as the individual. Aristotle says the children of such unions are weakly, small, and bodily incomplete. On the other hand, he says that men advanced in years produce only beings incomplete in body and mind, while the offspring of very old men are weakly. At Athens, although the free consent of the contracting parties was necessary before marriage, a minute examination of the bodies of both, especially of the genital organs, was made before the union was sanctioned. Physical exercises were enjoined on women, especially in Sparta. At Teos there was co-education, the girls mingling with the boys not only in lessons but in exercises. In other places they competed with the young men in the palaestra. It would appear that women ceased to devote themselves to gymnastics, at least in public, when they were married. Midwives seem to have played a great part in arranging suitable marriages.

Athenaeus of Tarsus, a celebrated physician, insisted on a careful preparation of mind as well as body in those who wished to beget offspring. The mind must be calm, free from anxiety or weariness. The body required exercise, sufficient but not tiring, and good nourishing food, easy of digestion. Oer-indulgence was condemned, and it was enjoined that women should be allowed an interval between conceptions sufficient to enable them to keep their health so that they might bring forth vigorous offspring. This was also insisted on by Soranus of Ephesus, the greatest gynaecologist of antiquity. The ancients well knew the injurious effect of alcohol on fecundation. Diogenes said of a deformed imbecile whom he met: "Young man, your father sowed you when he was drunk." Plato and Plutarch also held strong views on the subject. Hesiod recommended people not to procreate after a funeral, but after a feast. It would be difficult to better these instructions.

LONDON AS A POST-GRADUATE CENTRE.

THE London School of Clinical Medicine was established at the Dreadnought Hospital, Greenwich, seven years ago for purposes of post-graduation study, and the success of its work, to which the speech at a dinner held last week amply testified, proves that it has met a want in the medical life of London. Hitherto in England insufficient regard has been had to the interests of post-graduates. The London School of Clinical Medicine is not the only, nor was it the first, organization promoted for the provision of bedside facilities for men who desire from time to time to polish up their armour by some investigation of the newer methods of research and the most modern processes of treatment. The West London Post-Graduate College, the Polyclinic, and the North-East London Post-Graduate College are all carrying on similar work with excellent results. It is indeed a matter for regret that some larger scheme, such as that which so much occupied the thoughts of the later years of Sir Jonathan Hutchinson, has not been devised whereby all the post-graduate interests and institutions could be merged into one comprehensive scheme worthy of the empire and on a footing with the large post-graduate schools which in some other countries do much to promote the interests of advanced medical education and to carry more rapidly forward the evolution, in its widest aspect, of the great science and art of healing. The realization of such a hope must surely come some day, and meantime we can but congratulate the London School of Clinical Medicine and its sister institutions on the groundwork they, as pioneers, are now laying for a future superstructure worthy of their efforts and of the cause they represent. The Dean of the London School of Clinical Medicine pointed out how much more might be done to enlarge the field of work, especially in the direction of original research, if only money could be found to increase the accommodation of the school and to provide larger laboratory and other essential facilities. Here surely is an opportunity that should offer special attractions to the benevolent of this nation of sailors. Not only is the work of the clinical school carried on in the Dreadnought Hospital where only seamen of the mercantile marine are admitted as patients, but the school has also appealed so strongly to the Admiralty that a large number of its medical officers now go to the Greenwich school to put in their necessary courses of practical bedside work during their periods of study leave. The clinical school authorities have clearly pointed out that, above all, they do not wish it to become a class school. Their ambition goes much further and aims at a clinic so comprehensive as to attract men from every branch of practice—the soldier and sailor no less and no more than the civilian at home, and from the dominions, and from foreign countries. While this is a worthy ideal and one which has happily, so far, been realized, it is still true that an institution that does so much for the sailor interests of this and of other countries ought to commend itself with special insistency to those who, of their charity, desire not only to provide well for the men who go down to the sea in ships, but also to supply the means whereby medical knowledge may be advanced, doctors of every denomination made more effective for their daily work, the general health of the nation better safeguarded, and the position of Great

Britain as an exponent of post-graduation education made secure. The number of those who attend the London School of Clinical Medicine has become embarrassingly large, so that in the absence of endowment the school committee finds its hands tied. The governing committee of the Seamen's Hospital Society has aided the school generously, and is, we believe, always desirous of coming to its assistance. But the committee's hands are tied by its obligations to its subscribers and its allegiance to King Edward's Hospital Fund, so that the school, not without good reason, is more than ever driven to find the sinews of war from those wealthy philanthropists who are sons of our empire and to whom a worthy appeal is never made in vain.

MEDICAL RESEARCH UNDER THE INSURANCE ACT.

LAST June a Medical Research Committee with executive powers was set up for the purpose of dealing with the amount available for research under the proviso to subsection (2) of Section 16 (administration of sanatorium benefit) of the Insurance Act, 1911. It will be remembered that that subsection made available towards defraying the expenses of sanatorium benefit in each year one penny out of moneys provided by Parliament in respect of each insured person, and that the proviso authorized the Insurance Commissioners to retain the whole or any part of the sums so payable to be applied, in accordance with regulations made by them, for the purposes of research. It will further be remembered that though sanatorium benefit applies primarily to persons suffering from tuberculosis, it may be extended, by an order of the Local Government Board with the approval of the Treasury, to other diseases. In addition to the Medical Research Committee, an Advisory Council for Medical Research was at the same time appointed to advise the minister responsible for National Health Insurance before he gave his final assent to the Medical Research Committee's scheme for any year. A meeting of the Advisory Council for Medical Research was held on Thursday, December 4th. The meeting was called by the Chairman of the Council, Lord Moulton, on the authorization of the Chairman of the Joint Committee of Insurance Commissioners (Mr. Masterman), Lord Moulton is also Chairman of the Medical Research Committee, and we understand that the business of the meeting was to consider a general plan of the scheme of working proposed to be followed by the Medical Research Committee. During the last four months the members of the Medical Research Committee have instituted various inquiries and received many reports on the subject of their work, with a view to determining their plan of operations and the order in which subjects should engage their attention. The calling together of the Advisory Council may be taken to indicate that the Committee has formulated a general scheme according to which they propose to proceed to work. As already noted, the plans submitted by the Medical Research Committee require the consent of the responsible Minister, who, before giving his consent, must receive the report of the Advisory Council on the schemes submitted to them. If properly directed, and if it meet with general support, the work of the Medical Research Committee may provide prospects of a secure career to many research workers who have hitherto been lost to medical research owing to the fact that the opportunities for a career which provides a reasonable livelihood have been so miserably insufficient in this country in times past. We hope and believe that the co-operation of these two bodies will be cordial and sincere. They have no other aim than the discovery of truth and the encouragement and prosecution of research on the best lines. This movement may mark the commencement of a new era in the history of medical research in this country.

THE INSURANCE PUZZLE IN GERMANY.

THE insurance situation in the German Empire seems to be becoming more complicated, and the relations between the conflicting parties are such that the prospects of a settlement before January 1st are less promising than ever. The profession is apparently holding solidly together, and from the reports of various meetings up and down the country it appears that the university professors have joined forces with the general practitioners. The lay press on the whole is in favour of the doctors, while certain official personages who have not been friendly in the past now admit the justness of the claims put forward by the medical profession. A legal point of importance has been established; two societies of club doctors were removed from the list of unions, but on appeal to the highest court this decision was reversed, and the societies are therefore to be recognized as having legal rights to protect their members and to look after the interests of the profession. The Prussian Ministry of the Interior had supported the movement to refuse registration to such societies, and the judicial decision is therefore not very acceptable to this Government department. Of still greater importance is the decision of the Imperial Home Office in regard to paragraph 370 of the Insurance Order, which provides for the payment by the insurance societies of a sum of money to the insured in lieu of medical treatment, drugs, etc. It has been decided, in the first place, that paragraph 370 can only be put in force if the insurance societies appeal through the local insurance committees to the chief insurance office, on the ground that the failure to provide suitable medical attendance for the sick is due to the doctors' terms being unreasonable or impracticable. If the fault lies with the insurance societies, use cannot be made of the paragraph. If their terms are shown in all other respects to be acceptable, the fact that the doctors hold out for the adoption of the principle of free choice of doctor will not be regarded as sufficient ground for permitting the paragraph to be applied. The expedient of paying over money instead of providing medical attendance is only to be regarded as a means of enabling the sick to obtain medical attendance during any period of dispute between the doctors and the insurance societies, and cannot be used to favour the claim of one or other side. There appears, therefore, little prospect that the insurance societies will be allowed in the majority of the districts to pay the insured sick persons money in lieu of free medical attendance and drugs, since it can be shown that the terms to which the doctors are prepared to agree have been accepted by a large number of insurance societies as reasonable; as a matter of fact, in Breslau, Potsdam, Danzig, Baden, Bavaria, and some other districts, the parties have got so far that the agreements are ready for signature, and the doctors are only withholding their signatures until the same favourable terms are secured all over the empire. In Dresden the negotiations, which have been conducted through the intermediation of Count Vitzthum von Echstädt, the Saxon Minister of the Interior, have failed, and the societies are apparently attempting to make capital out of the unfortunate fact that the profession is not well organized in that city. In other instances the intervention of Government departments as peacemakers indicates that difficulties are anticipated by them in regard to the substitution of monetary payment for medical attendance. A further point of interest in the interpretation of the Imperial Home Office is the provision for certificates of illness in the event of paragraph 370 being brought into action. It is stated that the certificates may be given by the controllers of the insurance societies, by officers of district councils or the managers of large properties, by employers, midwives, nurses, or other persons possessing sufficient "responsibility and special knowledge." Some wonder is expressed that the policeman is omitted. But these "experts" may be required to substantiate their

opinions before the Insurance Committees or before a court of justice. It is to be noted that an insurance society will be required to pay to the insured person a sum not exceeding two-thirds of the average benefit for the corresponding class. In general this sum will not exceed 1s. a day, and must never be in excess of the sum actually expended on attendance, drugs, etc., by the sick person. But it has been shown that in certain places where a small number of doctors undertake the work the societies may be forced to apply to be allowed to adopt the paragraph in part. In such a case the societies would have to pay the usual capitation fee to the insurance doctors, and in addition a lump sum to those sick insured persons who do not obtain medical attendance from these doctors. At a meeting of the Society of Breslau Doctors on November 14th Dr. Werther gave an address on the situation, from which it appears that a sentence of five months' imprisonment has recently been passed by an imperial court for the offence of calling a person a "strike-breaker." Taking this to heart, Dr. Werther politely referred to certain "doctors who are to be imported from outside," and in the discussion these gentlemen were spoken of as "unobjectionable gentlemen" (*einwandfreie Herren*). The meeting was further told that there was no strike, but only a refusal on the part of the doctors to work with the management of the insurance societies. In Breslau provision has to be made for some 120,000 insured persons, and the societies claim that they have secured the services of sixty "unobjectionable gentlemen"; there seems, however, to be some doubt whether this number was at any time available, and a still stronger doubt whether the number now prepared to render service in Breslau has not materially diminished since the profession has proclaimed its determination to fight for independence all over the country. It is, indeed, believed that if the societies succeed in importing any "unobjectionable gentlemen" their number will not suffice to provide medical attendance for the insured. The meeting passed resolutions excluding "unobjectionable gentlemen" from all medical societies and refusing to meet them in consultation. A large public meeting will shortly be organized by the medical men in order that the public may learn the true story and what the profession thinks of these "unobjectionable gentlemen." Dr. Werther stated that a large number of better-to-do members had left the local insurance societies and joined the so-called free assistance clubs (*freie Hilfskassen*). This action, it was said, had hit the local societies very hard.

CONCENTRATED SOLUTIONS OF SALVARSAN.

WHAT is the best way to give salvarsan and neo-salvarsan? This is a question as to which there has been much difference of opinion since the introduction of these preparations. In the early days, the degree of alkalinity, the choice of methyl alcohol or water, and similar matters, were the subjects of numerous communications to the medical press. Later, the manner in which the distilled water was prepared formed the chief point of discussion. We have now arrived at a further stage. Most observers are agreed that intravenous injections are preferable to subcutaneous or intramuscular injections or to administration by the mouth. But the injection of a large quantity of saline solution or distilled water into a vein involves some difficulty. The work of Penfold and Hort shows that the most important factor in this matter is the absolute purity of the distilled water. The water got from the majority of stills is not free from bacterial contamination, since when the still is not in actual use it cools, and air is sucked in, and with it bacteria. The bacteria collect on the inside of the tube in the still, and when distillation is resumed the water is contaminated to an extent sufficient to cause a rise of temperature when injected intravenously. Stern[1] has recently suggested that the solutions of neo-salvarsan for intravenous injection should be of high concentration. While this would not get rid of the fault altogether, assuming that the explanation offered by Penfold and Hort is correct, it might be expected to lessen the clinical symptoms to which the slightly contaminated water might give rise. Other authors, including Ravaut, Dubot, Strauss, and Zumbusch, have arrived independently at the same conclusion. Quite recently a number of articles discussing this question from the practical point of view have appeared. G. L. Dreyfuss,[2] working with a special syringe and with 1 per cent. solutions — as compared with the 6 per cent. solutions of Stern and the 5 per cent. solutions of Zimmern — records very distinct advantages over all other methods. He states that the number of subjective and objective reactions is diminished by this method, and sets forth the many advantages both to the doctor and to the patient, including shortening of the duration of the injection, slowing the process of elimination of the drug through the kidneys, and the easier preparation of the solution. T. Katz[3] believes that the injection of concentrated solutions of neo-salvarsan has a more active curative influence than what he terms intravenous infusions of dilute solutions. After twenty-four hours the spirochaetes can no longer be discovered in the eruptions, and the method promptly influences the Wassermann reaction. The method, he says, is simple, the injections are well tolerated, and the therapeutic effect the best obtainable. On the other hand, E. Schreiber[4] points out that both he and Iversen tried concentrated solutions of salvarsan in the early days, and found them highly toxic, but, as this does not apply to neo-salvarsan, he advocates concentrated solutions of this substance. He attempts to explain the apparent contradiction by referring the toxic symptoms to oxidation processes, which in the case of neo-salvarsan are inhibited by a stronger concentration. He further points out that the addition of the alkali necessitates a large quantity of water in the old salvarsan solutions to bring them to approximate isotonicity with blood. This does not hold good in respect of neo-salvarsan, which does not require any alkali for a clear solution. It thus appears that while the majority of observers so far agree on the advantages of injecting concentrated solutions of neo-salvarsan into the veins, difference of opinion exists as to salvarsan.

ROLLER SKATING AS AN INDOOR EXERCISE.

ROLLER skating is a valuable form of exercise for town dwellers whose occupation leaves them with a minimum of spare time, or whose means or inclination forbids the pursuit of outdoor sports. Little time is wasted in reaching the rinks, and the amount of exercise can be more easily planned and regulated than in most other pastimes; for the music and the intervals mark the periods of work and rest, while plain skating, skate dancing, and figure skating afford a wide range of "dosage." Exercise for the sake of health may be regarded, practically, in terms of increased output of muscular energy, stimulus to the circulation, and increase in perspiration. Plain skating at fairly brisk speed enhances the activity of all these functions very slightly, and nearly in equal proportions. In dancing on skates, probably owing to the added exhilaration of tune and rhythm, the circulation appears to receive a stimulus out of proportion to the rise in the output of muscular energy. In figure skating the chief stress falls on the muscles, although there is the added factor of strain to the central nervous system. No schedule of dosage is required by the expert; but for the novice the following

[1] C. Stern, *Muench. med. Woch.*, April 1st, 1913.
[2] *Muench. med. Woch.*, October 21st, 1913.
[3] *Muench. med. Woch.*, October 21st, 1913.
[4] *Muench. med. Woch.*, September 9th, 1913.

may be taken as a rough guide to the graduation of exercise in a scale ascending from the mild to the strenuous, and omitting tricks and figures which cannot be classified: (1) Plain forward skating; (2) promenade waltz and Dutch roll; (3) barn dance; (4) spread-eagle waltz; (5) cut-off waltz; (6) two-step. Unless free perspiration follows the exercise the skater will not derive the full benefit possible. On the homeward journey delays should be avoided, and no time should be lost in taking a hot bath of short duration. If there is not then a sense of hearty exhilaration, and of greatly increased physical vigour, it is certain that the exertion has been unduly severe. Members of the medical profession who are always seeking for forms of exercise which can be regulated in amount and are accompanied by mental distraction, should not overlook the great potentialities of roller skating. One reason why this exercise has not been more recommended may be the current belief that the air at these rinks is laden with dust and the ventilation bad. That the first charge is not correct may be proved by observing the dustless state of polished boots after a few hours' skating. It must be conceded, however, that there is a measure of truth in the second count of the indictment, and that the air, although fresh enough for onlookers, is not sufficiently supplied with oxygen for persons who are taking active exercise. To prevent any ill-effects from this deficiency the health seeker should not remain in the building longer than is necessary for his quantum of exercise. He must, in fact, recognize that rink skating must be compared with gymnastics, dancing, fencing, or indoor tennis, and is often an excellent substitute for a Turkish bath. It is not to be ranked with golf or other outdoor sports, and should be used as a substitute only by those persons who do not enjoy facilities for their adequate pursuit.

THE DIVISION OF OPERATION FEES.

IN some countries it seems to be understood that if a physician calls in a surgeon to perform an operation the fee for the operation is to be shared. We have never heard of this being done in England, nor is it thinkable that the idea has ever been entertained in any part of our far-reaching Empire. From remarks made by the President at the inaugural meeting of the newly formed American College of Surgeons, the custom appears to be common in the United States. That it obtains widely in France seems to be generally admitted, but that it is apparently not recognized in Switzerland, the following story shows: A physician of high position in Paris had under his care a wealthy patient, for whom he considered that a very serious operation was necessary; and for the performance of this he deemed it best to obtain the services of an illustrious surgeon in Switzerland, whom he then called to Paris by urgent summons. On the surgeon's arrival the case was seen in consultation, and the operation was duly agreed upon and performed. In an interview which took place immediately afterwards, the physician told the surgeon that, having called him in to operate, he should expect an even division of the fee. The surgeon, greatly taken by surprise, not only by the demand but also by the discovery that such a custom was tolerated in the sister republic, expressed his agreement, saying that on his return home he would at once send the memorandum of his fees to the patient and faithfully discharge his obligation to the physician. Next day, therefore, he wrote to the patient saying that his fee was *ten francs;* and of this amount he straightway forwarded one-half to his French confrère.

THE FEDERATION OF NON-PANEL ASSOCIATIONS.

THE organizers of the meeting of representatives of non-panel associations in various parts of Great Britain held in London on November 29th did not see fit to admit a reporter from this JOURNAL, but a slightly condensed version of the report issued by them will be found in the SUPPLEMENT. The list of officers then elected was not supplied in the official report, but the omission has been repaired from a report published in the *Times* on December 1st. The following note furnished to us by a correspondent (a non-panel practitioner) who was present at the meeting will probably be read with interest by many: "From the non-panel point of view the most important recent event has been, or should have been, the conference of non-panel associations on November 29th. Unfortunately the results of the conference were marred by the irreconcilable differences of opinion on the question as to what should be the principal condition of membership of a federation of non-panel associations. To the ordinary mind it would appear that such a federation should include everybody who possesses the qualification of not being on the panel. On this simple principle the vast majority of non-panel practitioners could have been brought together, and subsidiary issues could have been debated later. Certain associations, however, had already resolved on a far more stringent definition, and were prepared to exclude from membership any association which approved of non-panel men sitting on Insurance Committees or on Local Medical Committees. It was over this position that a wordy battle was carried on for many hours; and the issue was rendered more confused by an unfortunate error in the counting of votes on an amendment proposed by Mr. E. B. Turner. In the end the more rational view appears to have prevailed, and individual associations were left to debate and decide the question for themselves locally. One of the most curious incidents of the debate was the introduction of Sir Henry Burdett as a peacemaker. Who was responsible for the intervention of this stormy petrel of medical politics, whence he came, and whither he was going, would probably be difficult to say. It is sufficient that he appeared to exercise no influence on the course of events. Subsequently an attempt was made to raise the question of membership of the British Medical Association disqualifying for positions on the executive of the federation, but this was withdrawn. The appointment of officers completely uncontaminated by contact with the Insurance Acts or with the Council of the British Medical Association brought the proceedings to a close. It is to be feared that the conference has not done so much as it might in advancing the non-panel cause. In fact, if the attitude of Manchester, Edinburgh, and Wandsworth were to prevail, there can be little doubt that the future of non-panel men would be much the same as is the present case of passive resisters to the education rate. Too many speakers were content to dwell on the 'higher plane,' meaning, apparently, that they were unwilling to adopt more prosaic methods of warfare. The curious thing was that this lofty contempt of anything like wire-pulling, or even the keeping of watch-dogs in the enemy's camp, was displayed by the very men who were trying to pull the wires of the conference in their own favour, and had come to the meeting with a cut-and-dried constitution and executive of their own making. It is not on these lines that a non-panel movement will be successful, but rather by means of an active and alert body, with its representatives in every position from which the Insurance Acts can be attacked. That men on Insurance Committees have already done useful work is shown by what has happened on the London Insurance Committee. The importance of allowing insured persons to contract out is being gradually recognized; and more and more laymen are being brought to appreciate the tactlessness and folly of Form 43/I.C. It is essential that the opinions of so large a body as the non-panel men should be properly represented in all discussions on questions arising in connexion with the Insurance Acts; and there is now no doubt that the

right body to voice their views is the non-panel committee of the British Medical Association."

BROODING ON DEATH.

MORBID brooding on death and its accompaniments was a characteristic of many members of the house of Hapsburg, especially the Spanish branch. They loved to "talk of graves and worms and epitaphs," and to "tell sad stories of the deaths of kings." Dr. Paul R. Mersey has studied the manifestations of this peculiarity in the light of modern psychiatry, and with the help of historical documents discovered during the last fifty years.[1] In the JOURNAL of April 19th, 1913, p. 839, an account was given of the mad queen known in Spanish history as Juana la Loca, who carried about the dead body of her husband, Philip the Fair, from place to place. Dr. Mersey has sought among her descendants for similar manifestations, limiting his research to the direct branch of the Spanish Hapsburgs, which died out with Charles II in 1700. In almost all of them he found a love of the subject of death, a haunting of the grave and delight in funeral ceremonies, which he calls "thanatophilia." Joan's son, the Emperor Charles V, during the last years of his life, took a strange pleasure in being present at funeral obsequies. From 1555 he passed whole hours in his room, which was draped with black and lit with seven torches, meditating on the death of his mother. He thought he heard a voice bidding him follow her. This is all the more strange since he showed little affection for his mother when she was alive. He had funeral services held for his father, his mother, and the empress, which he followed very devoutly. His own obsequies were celebrated with great pomp in his lifetime, all his servants being in deep mourning; he himself, clad in black, with a candle in his hand, took part in the ceremonies. Soon afterwards he died. Philip II was never so vigorous as his father, the Emperor Charles V, had been during some years. He was short, his limbs were frail, and he was a chronic invalid. During the greater part of his life, death was his favourite subject of conversation, and he never missed an opportunity of attending a funeral service. The Escorial which he built is a testimony of his mortuary tastes, for it is before all a burial place intended as a monument to the descendants of the house of Austria. He passed the last years of his life there, shut up in a room in a corner of which was his coffin. He arranged all the details of his own funeral. Margaret of Austria, wife of Philip III, who died at the age of 26 of puerperal fever, was also haunted by ideas of death to a degree beyond even most of the members of her family. She was the great-granddaughter of the mad Joan. She would say that she knew her life would be short, and spoke with complacency of the hour of her departure. A few days before her last confinement she went with the king to the Escorial, where, among the bodies of departed kings, she selected a place for herself. Even after her confinement, which passed off well, since she continued without bad symptoms for about four days, she declared that she would not live a week longer, and this came true. Philip IV had his own coffin made before his death, and insisted on lying in it to see whether it fitted. It was under his reign that the Escorial was completed, and on March 16th, 1654, he had transported thither the bodies of the kings and queens of his dynasty with ceremonies arranged by himself. King Charles II was weak in body and in mind. He may be said never to have grown up, and he spent his life practically doing nothing. But he often visited the Escorial and looked at the coffins of his ancestors, and at that prepared for himself. Death became his sole preoccupation. His sister, Marie Thérèse, when asked by Anne of Austria what she thought of her reception at the Louvre on the occasion of her marriage to Louis XIV, said: "I think of that other ceremony when one day I shall be carried to the vaults of St. Denis." This morbid brooding on death descended from Joan the Mad through five generations. Another case not included in the present study is that of Maria Theresa, wife of Francis I, Emperor of Germany. He died in 1765 and she survived him fifteen years, during which time she constantly went down into the imperial vaults to mourn for her husband, and devoted an entire month each year to the celebration of the anniversary of his death. She had her own coffin made secretly and wove her shroud with her own hands. The close intermarriage in the family should be noted. Charles V married his first cousin, Philip II his cousin Maria, by whom he had Don Carlos, and then his niece Anne, by whom he had his successor. Philip III married his cousin in the second degree, Philip III his niece, by whom he had Charles II. Consanguinity raises heredity to its highest power. There was distinct madness in Joan and in Charles II. In the others, though not mad, there was a family psychosis showing itself in thanatophilia.

[1] *L'Amour de la mort chez les Habsbourg.* Thèse de Paris, 1912.

EPSOM COLLEGE.

WE call the special attention of all our readers to the letter from Sir Henry Morris, the Honorary Treasurer of Epsom College, which appears at p. 1512, and to the particulars given in the statements by Mr. Douglas Crossley, the bursar, and Mr. J. Bernard Lamb, the secretary of the college, which will be found in our advertisement columns. Epsom College has so fully established its position as a public school that we need not dilate upon the educational advantages which it offers, especially to the sons of medical men. The General Medical Council has included the college in the list of approved places at which medical study may be commenced. The college has also been recognized as a "school of science" by the committee of the Conjoint Board of the Colleges of Physicians and Surgeons. How excellent is the scientific training given at Epsom is shown by the fact, mentioned recently in the JOURNAL, that of eleven boys from the college who entered for the first examination for medical degrees at the University of London in July last, no fewer than ten passed in all subjects. The unsuccessful candidate failed only in chemistry. One gained distinction in chemistry and physics, while another won an open scholarship of £75 at St. Mary's Hospital. Open scholarships have also been won this autumn at St. Bartholomew's Hospital by former Epsomians. Admirable as the scientific training is, the classical education is equally good, as is attested by numerous successes at the universities. Epsom has also a modern side which need not fear comparison with that of any other school. As is well known, not a few of the men who are in the front rank of the medical profession have received their preliminary education at Epsom. Many of its old pupils have also achieved distinction in other spheres of activity. Besides the school, with its fifty foundation scholarships for the sons of medical men who are not in a position to pay for a first-class education, there is another part of the Royal Medical Foundation attached to the college. The beneficiaries in this case are aged members of the profession who, through no fault of their own, have been left behind in the race of life, or the widows of doctors who have been unable to make a suitable provision for them. Fifty pensions are given to such persons. For the maintenance of the full number of pensioners and foundation scholars a sum of £7,000 a year is required, of which at least £4,500 has to be collected by annual contributions. The Council is most unwilling to reduce the number of the objects of these benefactions, and it appeals for help to carry on its noble work in its integrity. We are sure that the profession, which in the past has shown itself so generous in supporting Epsom

College, will not allow its beneficial work to be hampered by lack of funds, by contributing even more largely when it knows the financial anxieties with which the Council is burdened. We also echo the hope expressed by Sir Henry Morris that the appeal for the funds necessary to complete the reconstruction of the college chapel will meet with a liberal response from old Epsomians. The medical profession has every reason to be proud of the institution founded by the late Mr. John Propert, while Epsom with its school and its Royal Medical Foundation is a monument of the openhandedness of a profession not overburdened with wealth.

LISTER MEMORIAL FUND.

THE Committee of the Lister Memorial Fund proposes that the memorial shall have a threefold character: First, a simple marble medallion bearing a sculptured portrait of Lord Lister to be placed in Westminster Abbey; secondly, a larger and more conspicuous monument to be erected in some public place in London, where during the later years of his life he lived and worked; and thirdly, if the amount received prove sufficient, the foundation of an international fund to make grants in aid of research bearing on surgery and awards in recognition of important contributions to surgical science. Contributions recently made to the fund include the following: Newcastle-on-Tyne Committee, £46 7s.; members of the Newcastle-on-Tyne Clinical Society, £61 9s.; Newcastle-on-Tyne Clinical Society, £5 5s.; British Medical Association: Ceylon Branch, £14 7s. 9d.; Burma Branch, £19 3s. 7d.; Otago Division, New Zealand Branch, £5 5s.; Union of Swedish Hospital Surgeons, £20; University of Nancy (Faculty of Medicine), 100 francs; University of Bordeaux (Faculty of Medicine), 150 francs; Nottingham Medico-Chirurgical Society, £6 9s.; Plymouth Medical Society, £5 5s.; Wigan Medical Society, £2 2s. The secretary of the fund is Sir John Rose Bradford, Secretary of the Royal Society, and subscriptions, made payable to the fund, should be sent to the Honorary Treasurers of the Lister Memorial Fund, Royal Society, Burlington House London, W.

THE ROYAL SOCIETY.

AT the annual meeting of the Royal Society, on December 1st, Sir Archibald Geikie, before resigning the presidential chair, which he has occupied for five years, reviewed the financial position of the society, which he said stood in need of being strengthened. The grants made pursuant to the recommendations of the Government Grant Committee amounted during the year to £3,879. This expenditure left a deficit of £379, which had been made good by drawing on the reserve fund. The society required larger financial support to carry on and complete some of the enterprises which in the general interest of science it had undertaken. It would not be sufficiently provided unless it were in possession of an annual sum—apart from its ordinary income—of at least £1,000, which it could devote to any investigation that called for pecuniary assistance. He went on to announce that Sir James Caird of Dundee had recently given £5,000 to be expended in yearly disbursements of about £500 for the furtherance of physical research. The annual expenditure of the laboratory was now £30,000, and the society, feeling that it should be freed from this serious liability, was in communication with the Treasury on the subject. Meanwhile much valuable work was at a standstill for want of funds. Sir William Crookes having been elected president was duly installed, and Sir John Rose Bradford and Professor Arthur Schuster were re-elected secretaries. The new president was in the chair at the anniversary dinner held in the evening at the Hôtel Métropole, when the toast of the Royal Society was proposed by the American Ambassador, who, while thanking God that he had been born no earlier than he was, said that the rich flowering of science had been attended by a bankruptcy of great literature. He suggested that the explanation of this bankruptcy might be that the rise of science, changing the outlook of the world, had for the moment thrown men of great artistic power somewhat out of the use of that power. Sir William Crookes, in his reply, referred to some of the work which the society had in hand, and mentioned the investigation into the cause and prevention of glassworkers' cataract, which was being carried on by a committee appointed to administer the small fund granted by the Government for that purpose. The health of the retiring president was proposed by Sir Joseph Larmor, and acknowledged by Sir Archibald Geikie. The toast of the medallists, given by the President, was acknowledged by Sir Ray Lankester and Professor Harold Dixon, and that of the guests, given by Sir David Gill, by Lord Sumner.

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

AT a meeting of the Council of the Society of Tropical Medicine and Hygiene, on November 21st, the result of the ballot of the Fellows of the Society on the proposal to amalgamate with the Royal Society of Medicine, was announced; 60 were in favour of amalgamation and 216 against. Thus by a large majority it has been decided that the Society of Tropical Medicine and Hygiene shall remain as hitherto an independent society. This question has been most carefully considered during two successive years by the council which is responsible for the management of the affairs of the society, and on each occasion it was decided with practical unanimity that it was contrary to the interests of the society to agree to the proposed amalgamation. On the second occasion, however, it was decided to refer the matter for the decision of the Fellows by a referendum, and this course was approved at the annual meeting of the society on June 20th, 1913. Sir John Kirk, G.C.M.G., K.C.B., F.R.S., and Sir William MacGregor, G.C.M.G., M.D., have been elected Honorary Fellows, and fourteen new Fellows were elected at the ordinary meeting of the society on November 21st, when thirty-two persons were nominated by the council for election at the next meeting of the society. All medical men interested in tropical medicine are warmly welcomed as Fellows of the society, and the secretaries will be glad to give information to any who desire further particulars, if they will write to them at 11, Chandos Street, Cavendish Square, London, W.

THE ASYLUM SERVICE.

WE referred last week at some length to the report of the Medico-Psychological Association of Great Britain and Ireland on the status of psychiatry as a profession in the United Kingdom, and the reforms necessary in the education and conditions of service of assistant medical officers. We now learn that at the meeting of the Medico-Psychological Association, on November 25th, the following resolution was adopted: "The Medico-Psychological Association has been greatly pleased to hear that the Durham Visiting Committee has recently sent an official invitation to a general conference to visiting committees, to consider various questions affecting the welfare of assistant medical officers, and had authorized the committee appointed by the association to consider the status of psychiatry and assistant medical officers in this country, to place before this conference, or any committee appointed by them, all information that may be in its possession, and to offer all possible aid by submitting personal evidence or otherwise."

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

OUTBREAKS OF POLIOMYELITIS IN TYRONE.

AT the Cookstown Rural Council meeting last Saturday Dr. Burgess, J.P., Coagh, reported that 8 deaths had occurred from poliomyelitis in his district. There had been over 30 cases in all. No fresh case was known to have occurred since November 15th. Dr. Harris, Stewartstown, stated that there had been a case near Arboe, and it was also stated that there were several cases in the Magherafelt Union, bordering on Tyrone. Dr. Brian O'Brien, Medical Inspector of the Local Government Board, reported that the outbreak was of a very serious nature and of an unusually severe type. There was no evidence to show how this outbreak, which affected a particularly isolated portion of the country, had originated. The extension of the disease might have been caused by healthy persons carrying the disease germs or by means of flies. The schools have been closed in the district and will be left closed, and the infected houses have been disinfected. Though in most of the infected houses there are several children, yet in none has more than one case occurred.

TYPHOID FEVER IN DUBLIN.

Within the last fortnight there has been a rather extensive, though mild, outbreak of typhoid fever in the Pembroke township of Dublin; 22 cases have been reported and 7 have been admitted to hospital. It appears that on November 14th 2 cases of typhoid fever were reported to Dr. Cremin, Superintendent Medical Officer of Health to the Pembroke Council. A little later on the same day 2 more cases were reported to him. The milk supply was at once suspected, and inquiries elicited the fact that the milk in all the cases had been supplied by the same vendor. That evening Dr. Cremin wrote to the medical officer of health of the district asking him to make investigations. On visiting the dairyman's house, it was found that his daughter was suffering from typhoid. The girl was removed to hospital, and the Local Government Board, which was informed of the matter by telephone, issued an order closing the dairy, and the cows were sent to another district. The sale of milk of these cows was prohibited; during the next few days more cases of typhoid were reported, and about November 17th the outbreak was at its highest; after this the cases became fewer, and for some time now there have been no fresh cases. In every case the milk supply had been obtained from the suspected dairy. Fourteen cases of typhoid fever have also been reported from the Rathmines district and four from the Dundrum district. The first case in the Rathmines district occurred on November 7th, and it has been ascertained that milk was supplied to persons in the three districts from a dairy where a woman was suffering from typhoid fever. The disease, where it has occurred in these districts, also is of a mild type, and none of the patients are said to be dangerously affected.

ST. JOHN AMBULANCE ASSOCIATION.

The annual meeting of the Dublin Centre of the St. John Ambulance Association, held on November 25th, in the Royal College of Surgeons under the presidency of Mr. Justice Ross, Chairman of the Dublin Centre, was very largely attended. A guard of honour, consisting of the City of Dublin Division of the St. John Ambulance Brigade, Dublin Nursing Division, the Boy Scouts, and the Girl Guides, were drawn up to welcome Her Excellency the Countess of Aberdeen. The annual report stated that in 1880, three years after the foundation of the Association, ambulance work was started in Dublin at a public meeting presided over by the then Lord Mayor, and the Dublin Centre was registered in the following year. Last year 317 pupils attended first-aid lectures, and 182 home nursing lectures, whilst at examinations 66 candidates were awarded labels, 34 medallions, 134 first-aid certificates, and 134 home nursing certificates. The total number of men and women who since 1881 had attended courses of instruction in this centre was 11,846. The Chairman, in the course of his address, said that he thought every railway company should insist that its employees should have certificates of the association, and also that every member of the Royal Irish Constabulary should be trained to render first aid. After the election of officers and committee for the ensuing year, Lady Aberdeen distributed the medallions, vouchers, and certificates. The proceedings were concluded by a demonstration in the rendering of first aid given by different divisions of the Association.

DISPENSARY DOCTORS' SALARIES.

There was much excitement at the last meeting of the Bantry Guardians when a motion to rescind the resolution granting an increase to the dispensary doctors came up for discussion. Before the proceedings commenced close on a hundred stalwart rural ratepayers, many of them with sticks, whips, and ashplants, filed into the board-room. On a poll the motion to rescind the increases was carried by 15 votes to 10, and the result was greeted with loud cheering.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

ANTIVIVISECTION IN EDINBURGH.

THE annual bazaar in aid of the work of the Scottish Society for the Prevention of Vivisection was opened on November 25th by the Earl of Haddington, K.T. He is reported in the press to have said that he had based his argument against vivisection upon the question of whether the practice of vivisection was of real benefit to his fellow mortals, and also upon the high plane of morality which refused to bow to that which he looked upon not as science but as a scientific fraud, going perhaps as far as Lord Shaftesbury, who spoke of vivisection as "an abominable sin." As this remark was followed by applause it was evident that his lordship's audience were in agreement with him. Miss Lumsden, LL.D., said that they believed that the suffering of animals did not tend towards the amelioration of human suffering, and even if it did, there was something greater in man than his body, and that something was injured by any form of cruelty.

INFANTILE DEATH-RATE IN EDINBURGH.

It was almost a necessary sequel to the facts furnished by Dr. Maxwell Williamson regarding the extraordinary differences in the infantile death-rates in the various wards of Edinburgh, that some further inquiry into the matter should be made. On November 25th Bailie Stark gave notice of a motion to be submitted at the next meeting of the Town Council, to the effect that a "remit be made to the Public Health Committee to consider the advisability of making a special inquiry as to the cause of the excessively high death-rate in St. Giles and other wards, with a view to remedial measures being taken, and to report." It will be remembered (vide this JOURNAL for July 12th, p. 96) that Dr. Williamson, in his report for 1912, pointed out that whilst in the Merchiston Ward the infantile death-rate was only 46 per 1,000, it was 155 in the St. Giles Ward, and as much as 277 in one part of the latter ward (the Cowgate district). The more closely the figures are examined, the more arresting do they become. Thus, the number of births in the St. Giles Ward for 1912 was 670, and out of these no fewer than 104 died before the first year of life was ended—that is, 155.2 per 1,000. But the St. Giles Ward was not the only plague spot so far as infant deaths were concerned, for St. Andrew's Ward had a rate of 147.2, St. Leonard's one of 139.9 (with a single district, in which it rose to 232), and the Canongate one of 122.5. All these are densely populated parts of the city, and overcrowding suggests itself as a cause of the high infantile death-rate; indeed, from one stair in Milne's Court, closed not long ago, no fewer than 53 houses had entry. But the case of Portobello Ward is, at first sight, a difficulty: the infantile death-rate in it was 147 per 1,000, so that only two other wards had a higher mortality, and yet Portobello had the smallest population to the acre of any ward in the city; further, it is a watering place. The explanation, however, is found as soon as Portobello is visited; there are slums in a certain part of Portobello quite as bad as any of those in Edinburgh proper. The report of the Public Health Committee will be awaited

with keen interest, for if St. Giles could only be made as Merchiston, it is easy to see what an immense improvement in the vital statistics of the city would be effected. Meantime it is particularly interesting to note that since the commencement of the lady visitors' work in 1908 the infant mortality has fallen, whilst in the years ending with the close of the century it had been rising. It seems fair to conclude that maternal ignorance was one factor at least in the production of the high mortality, and that education of the mothers has been beneficial to their offspring. It is perhaps a sign of this increase of knowledge that in 1912 there were only eight deaths of children from overlaying, whilst fifty or sixty a year was at one time not an unusual number.

Vegetarianism in Edinburgh.

An address to the Edinburgh Vegetarian Society was given by Dr. C. H. Hayton, of Stanborough Park Sanitarium, Watford, on November 25th. The lecturer, who holds the triple qualification of Edinburgh and Glasgow, (1912) and is M.D. of Washington, U.S.A., is reported to have said that animal protein was not a pure protein, nor a sterile food, was expensive, was the cause of many diseases, and raised animal and baser principles in man. It was, he thought, well not to strike meat off too suddenly; eggs, milk, and cheese should be taken for a time, and then gradually replaced by fruit, grains, nuts, and vegetables.

The Typhoid Outbreak in Aberdeen in 1912.

The Medical Officer of Health, Dr. Matthew Hay, has issued a report on the outbreak of typhoid fever in Aberdeen in the autumn of 1912. Dr. Hay considers that for a town with a population of upwards of 163,000 inhabitants the outbreak, which began in the last week of September, was not extensive as typhoid outbreaks sometimes go, but he adds that any increase in the incidence of typhoid is always serious, as the disease has a high rate of mortality. On the assumption that every notified case of typhoid fever after the apparent beginning of the outbreak belonged to the outbreak, but excluding 12 cases of paratyphoid fever, and that the outbreak ended when the cases dropped to two a week, the number of known cases was 80. Dr. Hay gives the yearly number of cases of typhoid notified in Aberdeen since compulsory notification began about thirty years ago. The number for 1912 includes, of course, all the cases of the epidemic under report. It also includes, for fairer comparison with preceding years, all the paratyphoid cases, as it has not been usual until recently to distinguish paratyphoid from typhoid fever.

It has been observed during the epidemic under review that, in spite of the similarity of cases of typhoid and paratyphoid fever in clinical symptoms and in the nature and appearance of the micro-organism, they are in reality distinct and separate diseases; for at least two of the patients sent to the hospital suffering from typhoid, but in whom only paratyphoid organisms were found, developed some time later, and after a considerable interval of convalescence, a distinct attack of typhoid fever, accompanied by the presence of the genuine typhoid bacillus. The total numbers for the decades from 1882 are as follows:

	Number of Cases.	Number of Deaths.	Percentage of Deaths.
1882 to 1891	948	164	17
1892 to 1901	1,083	130	12
1902 to 1911	279	40	14
1912	121	15	14

Dealing with the source of the infection in the epidemic of 1912, Dr. Hay states that the facts would appear to indicate that the outbreak had its origin in water pollution. At the time the outbreak occurred there was in the Aboyne Fever Hospital a patient who, although the diagnosis was not altogether free from doubt, was probably suffering from typhoid fever. During his stay in hospital a large inspection chamber on the drain of the hospital burst, throwing into a tributary of the river, from which the city derives its water supply, an accumulation of the hospital sewage. After a period—perhaps a little shorter than might have been expected, but not an impossible period in view of all the circumstances—the outbreak began suddenly in the city. There are no filter beds to remove possible contamination, and the amount of storage is only what is necessary for sedimentation and for the mechanical or engineering requirements of the water supply. For the two largest water service areas of the city the storage is about equal, with six and a half days. All the definitely recognized cases of typhoid were confined to these two areas. In the remaining two areas, which, however, have only a small population, there were no definite cases. Against the suggestion of a water-borne infection was the smallness of the outbreak; but Dr. Hay states that even in the water areas most affected the time elapsing between the pollution of the water and its consumption was long enough to have greatly diminished the number of the infectious organisms in it, so that only the highly susceptible members of the community were likely to be attacked. Even on the supposition of milk pollution the cases were few, in view of the wide distribution of the "suspected" milk, especially when it is borne in mind that typhoid organisms do not die quickly in milk, but on the contrary may even multiply on it.

Health of the City of Glasgow.

The annual report of Dr. Chalmers, M.O.H. for the city of Glasgow for 1912, is a comprehensive document of 105 pages, with an additional 124 pages of appendices, charts, and plans. With regard to the population, three districts of differing rates of growth are distinguished—a central district, consisting practically of the parliamentary area of the city, showing constant depletion; an extra-parliamentary area within the old boundary with growth occasionally interrupted, and slower than at earlier dates; and the area of the extension, where growth of population is taking place.

Birth and Death Rates.—As the extended area was only included for eight weeks of 1912, the figures given apply to the old boundary, and the extended areas are given separately. The births in the old area numbered 22,044, and 21,812 belonged to Glasgow proper. This represents a birth-rate of 27.8 per 1,000, as compared with 27.5 the previous year. The rate shows considerable variation in the different parts of the city, and it is significant that year after year the birth-rate is higher than the average in those districts where the environment is least favourable to survival or to healthy moral and physical development, while the rate is lower than the average in those quarters where social and economic conditions are most favourable to youth. The infantile mortality among infants under 1 year was 122 per 1,000 births; although nearly the lowest on record for Glasgow, it is still enough to give much food for thought. Pre-natal conditions are clearly a determining factor in this large death-rate, and it suggests that a training in motherhood is urgently required. The deaths registered in the city from all causes number 13,797, and of these 12,760 belong properly to Glasgow. This represents a death-rate of 16.26 per 1,000, as compared with 16.44 for 1911. With the exception of 1911, the lowest rate previously recorded was 17.58 in 1906. The effect of low temperatures on the death-rate—first, when there was no fog, and, secondly, when there was fog—also have been noted, and statistics bearing on this are given in detail in the report.

Infectious Disease.—This is dealt with in Section II of the report, and during the year no fewer than 30,411 cases of various infectious diseases were registered and dealt with. This is an attack-rate of 39 per 1,000 of the population, and is 3 per 1,000 more than in the preceding year. Of the total, 7,978 cases (26 per cent.) were treated in hospital. Thirty-four cases of typhus occurred, with 2 deaths; enteric fever was considerably less prevalent than in any previous year. It is worthy of note that the non-notifiable diseases—measles, whooping-cough, and diarrhoea—account for almost four-fifths of the zymotic death-rate. Measles alone accounted for a death-rate of 664 per 1,000,000 persons living, as compared with a rate of 406 per 1,000,000 for all the notifiable diseases put together. The most fatal notifiable disease was diphtheria; 1,735 cases occurred, with 182 deaths. Over 90 per cent. of the cases were treated in hospital. Enteric fever accounted for 40 deaths out of 244 cases, while 2,893 cases of scarlet fever were notified, of which 73 died; 91.9 per cent. were treated in hospital.

Tuberculosis.—The number of cases of phthisis registered was 2,340, and there were 1,034 deaths. The development of the scheme for the administrative treatment of phthisis has proceeded along the lines of the special report submitted by the medical officer of health some time ago. Six dispensaries are at present in operation, but changes are in progress. The difficulties to be encountered may be gauged from the report that since 1910, when compulsory notification was introduced, 8,162 cases have been registered. Of those registered in 1910, no fewer than 1,723 were dead by the end of 1912, while 525 more had either left the city or had been lost trace of at the end of the year. Of the cases registered in 1911, 96 were dead at the

close of 1912, while 298 others had passed from observation. Of the 1912 cases, 766 died during the year, and 175 others had passed from observation. On December 31st, 1912, 3,679 cases were still under observation in the old Glasgow area. A considerable time must elapse before the hospital provision which has been sanctioned is available, but steady progress in the fight against consumption has to be recorded.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

The Manchester Royal Infirmary.

The board of management of the Manchester Royal Infirmary had under consideration at its meeting on November 25th the question of opening a new surgical unit to meet the demands that exist for further hospital accommodation. It was stated that there were at present over 500 applicants for indoor treatment, all of whom had been certified as needing such treatment. The new infirmary contained the wards that were needed, though they had not been used up to the present. Sir William Cobbett, the Chairman of the Board, said that in 1912 the ordinary expenditure of the infirmary was £37,480, and the income £32,585, leaving a deficiency of £4,895. The opening of the proposed new unit, with accommodation for sixty patients, would mean an additional cost of £3,000 a year, and, even taking into account certain increases in income, the anticipated deficiency would be £ ,222, which was a serious responsibility to undertake. The work of the infirmary had increased enormously since it was removed to the present site. In 1908 there were 5,169 in-patients, while in 1912 there were 8,575. The out-patients and casualties numbered 46,000 in 1908, but in 1912 the number reached 67,000. In fact, the work had increased so much that the board was practically forced to open the new unit, in spite of financial difficulties. The proposal was obviously in the best interests of the poor, and he hoped that the board would meet with the heartiest support. He moved: "That an additional surgical unit to provide accommodation for sixty surgical patients be opened with all convenient speed." This was seconded, and carried unanimously.

Mussels and Enteric Fever in Manchester.

At a meeting of the Ancoats Healthy Homes Society on November 27th, Dr, Niven, the M.O.H. for Manchester, gave a lecture on "Common Nuisances," dealing specially with house-flies, tainted milk, and mussels. He said there were good grounds for believing that the house-fly was a fruitful cause of infantile diarrhoea and enteric fever, and he showed that, in the neighbourhood of manure heaps, flies multiplied in a remarkable way. The eggs were generally hatched in manure in a little over a week, and the Corporation of Manchester had accordingly adopted a by-law providing that no collection of manure should be allowed to remain near houses for longer than a week. Speaking of the nuisance of dirty milk, he especially condemned the practice of sending unclean uten ils to the dealers for milk. A great many small grocers now sold milk, and not a few greengrocers, and people who had been handling potatoes and various roots which were often grown in manured ground would frequently go from these to serve milk, and almost inevitably matter from their hands fell into the milk. An attempt had been made to stop this in Manchester and had partly succeeded, but the conditions in many small shops were often quite unsuited for the sale of milk. The least that people could do was to see that utensils for milk were clean, and if the milk were scalded at once and then covered with a clean cloth there would be little danger. Dr. Niven went on to say that he had no hesitation in asserting that typhoid fever was largely conveyed into Manchester by means of mussels, which came chiefly from places on the coast of Wales and from Ireland. Liverpool and Birmingham had attempted to prevent mussels being sent from these places, and some efforts had also been made to prevent their being sent to Manchester; but the fact remained that on investigation a large proportion of the cases of typhoid could be traced with some certainty to mussels. He would not be sorry to see the mussel industry entirely obliterated, as the price paid for it was, in his opinion, greater than the value. If, however, the industry had to continue, he strongly urged that no mussels should be consumed in a raw state; it had come to his notice that a large quantity of raw mussels were offered by vendors to persons coming out of public-houses, and were then consumed without any cooking.

Dr. Niven's remarks about the mussel industry have caused considerable resentment among the dealers, and a letter of protest signed by a number of them has been sent to the press. Dr. Niven's statement that mussels often cause typhoid is seriously questioned, as it is asserted that all the mussels sent are properly examined by the fisheries inspectors, and each consignment must bear the signature of an inspector to the effect that they have been gathered only from approved beds. In the Annual Report of the Health of Manchester for 1912 Dr. Niven says that of 242 cases of typhoid 108 were in all probability caused by mussels, which had been eaten raw in 37 cases, steamed in 52, and both raw and steamed in 12, but in no case were the mussels cooked sufficiently to kill organisms in their interior, as they were simply thrown into a pan over a fire and then removed as soon as the shells opened. The beds from which the mussels came could not be stated, as the dealers withheld information. They were received from the wholesale dealers in canvas bags, which the shopkeepers emptied on the window slabs, and piles of oysters, crabs, mussels, shrimps, etc., were arranged in tiers sloping down towards the windows. In order to keep them fresh, they were from time to time watered from a can provided with a rose, and whatever was washed from the upper tiers must flow down, so that if any infection was present all below were liable to be infected. It is acknowledged that the evidence is not complete, because, as a rule, bacteriological proof is not available, but such proof, it is argued, would be practically impossible, as the mussel would require to be examined at the date of eating, and as the incubation period of typhoid is prolonged, no such proof can be expected. But there is ample proof that mussels have often been contaminated with sewage, and a number of samples examined showed the *Bacillus coli communis* in a thousandth part of a mussel. In Manchester mussel-eating is indulged in very extensively, and as a great many persons make a livelihood by the sale, they will naturally resent interference with their trade. If only properly cooked mussels were eaten, the danger might be removed, but Dr. Niven insists strongly that every possible method needs adopting to prevent infection, as enteric fever is so formidable a disease amongst young adults in Manchester.

LONDON.

Metropolitan Asylums Board.

Provision of a Street Ambulance Service.

The London County Council having asked the Metropolitan Asylums Board to prepare a scheme for a street ambulance service for London (BRITISH MEDICAL JOURNAL, November 22nd, p. 1403), the Ambulance Committee reported to the Board on the subject on November 29th. The Committee thought that, subject to the condition that an ambulance service must be provided, maintained, worked, and controlled by one authority only, the Board would no doubt readily co-operate with the County Council and any other authority in making the necessary provision. It was doubtful whether the boards of guardians or the borough councils could lend material assistance in respect of ambulances, seeing that these were provided, where they existed, for definite purposes and might not be available for street accidents at the moment they were required, but they might give help in the way of sites for small ambulance stations. It appeared desirable that the Port of London Authority should continue to make its own arrangements in the dock area, and the service should exclude the City of London, where ambulances were already available. The Committee laid down the following conditions as those under which the Board might undertake to provide a service:

(i) The agreement should be for a definite term of years, and should provide for the payment by the Council of the capital cost and the annual cost of working.

(ii) The service should be controlled from the head office of the Asylums Board.

(iii) There should be no interchange whatever, under any circumstances, of vehicles or appliances between the infectious and the non-infectious branches of the Board's amoulance services.

(iv) Subject to this condition there was no reason why existing ambulance stations should not be used for housing accident ambulances. This at once supplied the Board with seven centres in different parts of the metropolis, and the Committee proposed to supplement them by providing ten or twelve small additional dépôts exclusively for accident ambulances. These should be large enough to hold two ambulances; they could be erected on small plots of ground, and need not be expensive. There would then be about eighteen dépôts so placed that almost every part of the metropolis would be within a mile or thereabouts of an ambulance station. The co-operation of various authorities would be valuable in respect of sites as saving not only expense, but delay in finding and purchasing suitable sites. Each station would be connected by direct private telephone line with the head office.

(v) A continuous day and night service should be maintained, and, to begin with, one accident ambulance should be provided at each station, with a small additional number in reserve; they should be electrically driven. A wheeled litter might also be provided at each station. Supplemented by the 400 wheeled and hand litters possessed by the police, and the appliances of other societies, it should then be impossible for any accident case in any part of London to remain for more than a few minutes without first aid and the means of conveyance to the nearest hospital.

(vi) It was not proposed to instal throughout the area street call pillars such as those provided in the city. This would be a very costly proceeding, involving an annual outlay of some thousands of pounds. It was proposed to rely on existing telephone facilities; there were already 2,770 public call offices. The head office would receive all calls, which would be expedited by arrangement with the Post Office, and the appropriate station would be instructed instantly to send the ambulance to the spot in licated. Generally speaking, the police would give the call, but the fullest publicity would be given, so that every one would know how the ambulance might be summoned.

(vii) Each station would have two men in constant attendance; both would be competent motor drivers, and have a knowledge of first aid and of the topography of the area.

(viii) The Committee estimated the capital cost at £18,600, exclusive of the purchase of any sites needed for new stations. The annual cost was estimated at £17,800, exclusive of such additional call boxes as might be required. The Committee proposed that no rent should be charged for the Board's existing organization and telephones.

In the course of a short discussion various speakers congratulated the Committee on having prepared a scheme at such short notice, the request from the County Council having only reached the Board on November 20th. The point was emphasized that the ambulance service would be kept entirely distinct from the infectious service of the Board.

Relations of the Board with its Medical Staff.

On the question of the salary to be attached to the position of medical superintendent of Darenth Industrial Colony, made vacant by the appointment of Dr. Arthur Rotherham to be a member of the Board of Control under the Medical Deficiency Act, and the method of filling the vacancy, the Asylums Committee presented a report dealing with the whole question of the relations of the Board with its medical staff. Dr. Rotherham's maximum having been £900 with emoluments, the Committee proposed a salary for the next holder of the office, beginning at £700 per annum, rising by annual increments of £50 to £900, with emoluments of unfurnished house and washing. The Board authorized the Asylums Committee to consider in the first instance the claims and qualifications for the post of officers already in the service.

Treatment of Ophthalmia.

The Board having received a request to establish a special institute for children appearing to have a tendency to ophthalmia, the Children's Committee had consulted Sir Arthur Downes, M.D., and the Board's chief ophthalmic surgeon, Mr. E. Treacher Collins, F.R.C.S., and had come to the conclusion that the matter could be dealt with by means of periodical inspections of children at Poor Law schools by a surgeon skilled in the recognition and treatment of ophthalmia. Mr. F. A. C. Tyrrell, a part-time assistant medical officer at the ophthalmia schools, was appointed to undertake the inspection of schools accommodating over 700 children, visiting once a month for an experimental period of six months, at a fee at the rate of 30 guineas per annum.

The Shortage of Nurses.

Some discussion took place on a motion by Admiral Henderson, that in order to deal with the difficulty of the shortage of nurses a full staff should always be maintained, their services to be utilized by taking in a larger number of cases of measles and whooping-cough, or other infectious diseases, both measles and whooping-cough being made notifiable in order that this should be done.

Dr. Bousfield said that experience gained in recent epidemics showed that the arrangements made by the Board were in danger of breaking down. For instance, it had become apparent that Joyce Green Hospital, instead of being in readiness to cope with an epidemic of small-pox, would require considerable alteration. The whole question was referred to the Hospitals Committee.

Correspondence.

EPSOM COLLEGE.

SIR,—I shall be grateful if you will give space for this brief letter, whereby I desire to draw the attention of your readers to the full-page advertisement (p. 75) of Epsom College and its Medical Foundation.

Particulars will be found therein (1) of the educational advantages offered by Epsom College as a secondary school with a very highly-equipped modern side as well as a classical side of the first order; (2) of the Royal Medical Foundation attached to the college, by means of which a large number of pensionerships and foundation scholarships are provided for the necessitous members of the profession and their families; and (3) of the imperative need of rebuilding and enlarging the college chapel.

I hope that the notice respecting the College Chapel Fund especially will meet the eye of many an old Epsomian, that it will be read by them with sympathetic interest, and that the fund will derive both direct and indirect assistance from them.—I am, etc.,

HENRY MORRIS,
Honorary Treasurer.

8, Cavendish Square London, W.

ANTIMONY IN SYPHILIS.

SIR,—With reference to your allusion to antimony compounds in the JOURNAL of November 29th (page 1449), permit me to say a few words about them in general and antiluetin in particular. Considerable attention has been paid to the use of antimony compounds in protozoal diseases, and several articles dealing therewith have recently appeared in the foreign literature. In some protozoal diseases antimony is probably more efficacious than arsenic, but this is by no means the case in syphilis.

Owing to the kindness of Dr. Schwarz (Zurich) I have had the apportunity of trying Tsuzuki's antiluetin, which I have prescribed intramuscularly and intravenously. The salt is readily soluble, so for the intramuscular injections I had it put up in ampoules containing:

Antiluetin	0.025 - 0.1 gram
Cocaine hydrochlor.	0.025
Distilled water...	1.00
Thymol	q.s.

In each case about twelve injections were given daily or every other day. In some cases the intramuscular injections caused a good deal of pain; the syphilitic lesions disappeared, but not so quickly as under salvarsan. When given intravenously the action of antiluetin fell far short of that of salvarsan, and in some cases did not seem to act any better than intravenous injections of tartar emetic.

It would appear that, at any rate in syphilis, although antimony salts may be used as an alternative treatment, their action is not so powerful as the arsenic salts.

It is more than probable that the benzene ring in the case of salvarsan, and the tartaric acid in the case of antiluetin, are merely the vehicles which carry the respective metals to their destination, and that they have no further function. The reason why spirochaetes vanish so quickly after the administration of salvarsan is that they contain free OH groups, since in their colloidal lipoid membrane an unsaturated fatty acid exists; it is to these hydroxyl groups that metals become attached, with the result that the organisms perish.

The other phases of the *Leucocytozoon syphilidis* have no free OH groups, and therefore cannot be attacked

directly either by arsenic or antimony. My own opinion is that the other phases are destroyed by oxidizing enzymes, which arsenic and antimony can accelerate, as manganese does some plant oxydases.

The spores contain little or no colloidal membrane and only nuclein, hence they cannot be easily oxidized; they may remain in the system for years untouched, and then for no apparent reason start off the cycle again which results in the production of gametes and so symptoms.

It is becoming day by day more doubtful whether syphilis is really cured directly by treatment; therefore would it not be wiser, considering that so much attention is being paid to treatment at present, if more thought were given to prevention? It must be remembered that no disease has ever yet been stamped out by treatment, and history has an awkward way of repeating itself.—I am, etc.,

London, Nov. 28th. J. E. R. MCDONAGH.

THE CRAZE FOR APPENDICECTOMY.

SIR,—The subject brought forward by Dr. Robert Hutchison in the BRITISH MEDICAL JOURNAL for November 15th, and continued by other writers in later JOURNALS, opens up a very big question—namely, the comparative value of the diagnostician and the operator. For some time past the surgeon has held the field in nearly all acute and chronic abdominal diseases on account of his daring, his skill, and his success. A reaction is now setting in, for reasons which have already been stated. The vast importance of early diagnosis is beginning to be more appreciated, not only by ourselves but by the public. It requires greater knowledge, more acumen, more experience to be a good diagnostician than to be a good operator. A man may be both, but the qualities of each are not as a rule evenly divided.

There has been, but to less extent now, a want of relative importance of the value between the diagnosis of disease and its treatment. The diagnosis of disease is inefficiently rewarded; the treatment of it often receives too much.

What is really required in these modern days of rush and stress is that more time, attention, thought, and experience should be given up to the unravelling of these abdominal cases—of course I am not referring to the acute cases—and that the short cut should not be taken of opening an abdomen to make the diagnosis before all other means have been used.—I am, etc.,

Folkestone, Dec. 1st. W. J. TYSON.

SIR,—It is interesting to note how often the same medical topics are discussed simultaneously in France and in England, and how close may be the resemblance between the views of the extreme faction on both sides of the Channel. Here, as with you, the rage of appendicectomy is rampant, and must surely have reached its climax. Tiny children play at appendicitis with their dolls—a weird example of precocious suggestion—while dames of high degree take the same pride in the "dear little scars" imprinted on the abdomen by fashionable surgeons that a collector might in the *remarque* of a choice proof engraving.

The change in the current of popular feeling has, of necessity, exercised an influence on the attitude of practitioners when dealing with cases in which there is no indisputable need for surgical intervention. Whereas formerly it was the surgeon who advised interference, now the urgency comes from the patient or his friends, and, should there finally be a fatal issue, blame attaches to the surgeon only if he has held his hand or performed the operation at a date held to have been too long postponed. The abstentionist must, then, be sure of his ground clinically, and be prepared to grapple with deeply rooted prejudice with calm serenity. As may be supposed, in such an environment many needless operations are performed.

The most frequent errors in diagnosis may be summarized as follows:

1. Hyperaesthesia of the skin in an acute form, connected sometimes with affections of the bowels.
2. Attacks of pain in conjunction with the periods, and accompanied by rise of temperature.
3. Biliary disorders (lithiasis).
4. Visceroptosis: (*a*) Coloptosis, with kinking at the hepatic flexure; (*b*) gastroptosis, with descent of the pylorus to McBurney's spot; (*c*) nephroptosis with its complex semeiology.

In conclusion, much more must be known of the root facts of the problem as a whole before we can express our judgements in terms of *formulae;* while perhaps the surest means of determining the boundary line of the physician will be found in a patient appraisement of the final results of the forays of the surgeons in a territory formerly forbidden to them.—I am, etc.,

Paris, Nov. 28th. GUSTAVE MONOD.

SIR,—Like Sir James Goodhart, I think Dr. Hutchison has done good service in writing his letter on the "craze for appendicectomy." It is good in that he is revealing, I will not call it a craze, but a "possible disinclination" on the part of some physicians to diagnose definite abdominal disease when persistent pain is present.

That some cases are not cured by the removal of the appendix is surely no greater reproach than that they are not cured by the long course of drugs, rest cure, massage, colonic douches, and dietetic treatment meted out to them by the physician before the question of operation is broached.

It should be recognized, and is so recognized by most surgeons whose practices deal much with the appendix, that if at the operation there is not sufficient evidence of appendicular disease, the pelvic organs, the gall bladder, the stomach, and the duodenum should be searched for the cause of the pain.

It is surprising how often disease of one organ will mimic that of another. There are cases, as Dr. Aldren Turner points out, of nervous diseases in which the pain simulates disease of the appendix or gastric ulcer. But those of us who have had the privilege of finding we have made these mistakes walk circumspectly.

The other side of the question comes in, however. Sometimes patients with spinal lesions get chronic appendicitis. About a year ago a patient was sent to me with a view to an operation for abdominal pain of some months' duration. As the pain was indefinite in its relation to food, although in the left side of the epigastrium, and as he had suffered from diplopia of syphilitic origin (the pupil reflexes and knee-jerks were present), I ventured to diagnose a syphilitic lesion of the cord. I prescribed mercury and potassium iodide. His pain disappeared rapidly, and he was apparently cured. However, two months ago I opened his abdomen, as for the previous two months he had suffered from pain and diarrhoea persisting in spite of treatment. The suspicion of malignant disease of the colon made me urge him to have an exploratory operation, though I told him that from previous experience it was possible I might find chronic disease of the appendix. The only abnormal condition found at the operation was an appendix much bound down by inflammatory adhesions. He has now no pain and no diarrhoea. This is the fourth case I have explored for epigastric pain and diarrhoea persisting in spite of from two to three months' treatment in which I have found chronic appendicitis, and in which the removal of the appendix has cured the symptoms. Without operation these cases might have been looked upon as examples of mucous colitis.

The diagnosis of acute appendicitis is sufficiently well known to be beyond the limits of this discussion; but in the chronic cases the only reliable sign is tenderness over the region of the appendix—undoubted localized tenderness. A history of attacks of pain, followed by discomfort on standing erect, or stiffness in the muscles over the right iliac fossa, is also significant.

In the course of operating upon some hundreds of cases of "appendicitis" (the majority typical), amongst those whose principal trouble was chronic abdominal pain the chief mistakes in the diagnosis were gall stones or cholecystitis, gastric or duodenal ulcer, pyosalpinx, or a heavy displaced uterus, associated with or present in place of the diagnosed chronic appendicitis.

My experience is that it is rare for people to rush into operations before a thorough trial has been made of medical treatment for abdominal pain, and that, when appendicectomy has failed to relieve, the appendix was not the cause of the symptoms, but some other abdominal disease existed, which might have been discovered and remedied at the time of the operation.

Finally, that there will be cases which will disappoint

all of us, physician and surgeon alike, and these are the ones upon which we ought to have light thrown.—I am, etc.,

London, W., Dec. 1st. JOSEPH CUNNING.

SIR,—I am very pleased to see the list of cases reported by Dr. Wells in the issue of the JOURNAL of November 29th. I only wish I had notes of as many of my cases of pain in the right iliac fossa. A few facts are worth a volume of theories and suppositions.

It is all very well for Sir James Goodhart and Dr. Turner to suggest that more care should be taken in diagnosis; they seem to take it for granted that a case is seen once and immediately operated upon. What proof have they that any one case has not been watched, and who can be positive in doubtful cases?

I thoroughly endorse Sir James Goodhart's advice when he says, "in a certain case he was not sure," and "that in many cases the best we could do was to look and see." I will go one stronger, and say, "When in doubt operate," and "never put off till to-morrow what one should do to-day." I have never regretted acting on these maxims. If some one would try to formulate a book of golden rules on abdominal diseases he would do well, and the first rule under suspected appendicitis should be: Always examine by the rectum.

It would be helpful if Sir James Goodhart would suggest where records could be pooled and kept of all cases, whether appendicectomy or other abdominal conditions. In the provinces it appears to me that there is no way of reporting records at all. Instead of suggesting that appendicectomy is done too often, I should say that a great deal is still wanting in the methods of making an early diagnosis of appendicitis, and thereby avoiding many woeful results.—I am, etc.,

Wallington, Nov. 29th. ARTHUR Z. C. CRESSY.

MOUNT VERNON HOSPITAL, HAMPSTEAD.

SIR,—In reply to the letter of Mr. Charles Johnston, chairman of the committee of management of the Mount Vernon Hospital, printed in your issue of November 29th, we wish to refer mainly to the causes of the resignation of the whole of the consulting staff and the large majority of the acting staff, a statement of which appeared in your issue of July 12th, 1913.

At the expense of chronological order, but to clear the ground, we notice that with regard to one of the causes of the resignation of the staff there is no essential difference between us and the chairman. The fact is that, after what must seem to most an arbitrary action on the part of the committee of management, the chairman of the committee refused to meet the medical board in conference. Whether the proposed action of the committee of management with regard to the Northwood appointments was justifiable or not, it was pointed out in an unmistakable manner that the medical board disagreed with it, and that it might be fraught with serious consequences to the hospital. In view of this we must maintain that the refusal on the part of the committee of management to discuss with their honorary medical staff so important a matter as the Northwood appointments not only justified but, even alone, practically necessitated the resignation of the staff.

We now turn to the matter which, as we were legally advised, could only be described as the summary dismissal of two members of the medical staff from their appointments at Northwood. At the risk of unduly encroaching on your space, we venture to give as shortly as possible an account of the origin and development of this procedure. Towards the end of 1909 it was decided by the medical board, consisting of all the members of the honorary medical staff, that all the honorary visiting physicians to the hospital should have the rank of full physician, and should be given charge of beds at either the Hampstead or Northwood institution. The two junior physicians, Dr. F. W. Price and Dr. A. J. Whiting, the only members of the staff who were then without beds at either institution, were allotted twenty beds each at Northwood, the remaining beds there (sixty in number) being under the care of the two senior physicians—namely, Dr. J. E. Squire and Dr. G. F. Johnston. This arrangement was referred by the medical board to the committee of management for their approval, which they gave, and confirmed subsequently in letters to Dr. Price and Dr. Whiting, dated November 17th, 1909. In these letters the above physicians were informed that they were elected visiting physicians to the hospital at Northwood for a period of twelve months. Although these appointments were originally intended to be renewed from year to year, formal renewal of them was allowed to lapse by the committee of management, so that as a fact no further communication was received, either by the medical board or the physicians in question, from the committee of management concerning these appointments until the letters hereinafter to be referred to were sent to Dr. Price and Dr. Whiting on April 17th, 1913.

From about the middle of 1911, during the whole of 1912, and during the earlier months of 1913, considerable difference of opinion occurred between the committee of management and the medical board concerning the management of the hospital, and especially with regard to the proposal to sell the hospital at Hampstead and devote the funds to the maintenance of the sanatorium at Northwood. In this controversy the whole of the staff were united in condemning the policy of the committee of management, and all of them signed a memorandum, dated December, 1911, to this effect. Certain members of the staff, representing their colleagues, voiced the opinion of the medical board (more especially Dr. Tunnicliffe, Dr. Price, and Dr. Whiting).

At an adjourned meeting of the committee of management held on March 19th, 1913, one week after the meeting of the governors at which it was decided to sell the hospital at Hampstead, and at which Dr. Tunnicliffe and Dr. Whiting had both made speeches strongly condemnatory of the policy of the committee of management, the following motion was brought forward by the chairman: "That a change of physicians is desired at Northwood, and that the posts be offered to Dr. Johnston, Dr. Kelynack, and Dr. Lister." It was only after the strongest protest from the representative of the staff present that this motion was referred to the medical board, the chairman at the same time giving notice that he should bring it forward at the next meeting. The motion was carefully considered by the medical board at their meeting on April 1st, 1913, and it was pointed out that the appointments at Northwood were annual ones; that Dr. Whiting and Dr. Price were appointed in November, and therefore their appointments could not be justly terminated in April without notice. Attention was also drawn to the fact that the motion was in itself inconsistent in so far as, although a desire was expressed to have other physicians, its proposer purposed retaining Dr. Johnston, who had been visiting physician to Northwoood for over four years. As a result of the discussion the following resolution was proposed, seconded, and unanimously carried:

> That for a year, or until such time as the hospital at Hampstead be sold (provided that this take place before April 10th, 1914), the present physicians continue to attend at Northwood; but that in the case of the Hampstead Hospital being sold, the duties of the present medical staff of the hospital with regard to Northwood be considered *de novo*.

At the following meeting of the committee of management, on April 16th, the chairman moved his resolution—namely, that Dr. G. F. Johnston, Dr. T. N. Kelynack, and Dr. T. D. Lister be appointed visiting physicians at Northwood; and in spite of the resolution of the medical board and the protest of the representatives of the staff, who recited the arguments that had been used at the meeting of the medical board, this resolution was carried *nemine contradicente*.

The next step taken by the committee of management was the dispatch on April 17th of letters to Drs. Price and Whiting informing them of the new appointments at Northwood, and saying to each, "Your appointment as a visiting physician at that hospital now terminates." On the receipt of this letter the physicians in question consulted their colleagues and their lawyers, and the whole matter was again discussed at the meeting of the medical board on May 6th. As a result of these consultations, Dr. Price and Dr. Whiting wrote to the secretary of the hospital informing him that they could not accept these letters as valid notice of the termination of their appointments at Northwood, and, in accordance with legal advice, they continued to attend as physicians to that institution. Their letters and action elicited three letters

from the committee of management, one each to Dr. Price and Dr. Whiting, acknowledging their letters of protest and enclosing the following extract from the minutes of the meeting of the committee held on April 16th: "The period for which the present physicians to the Northwood Hospital were appointed having expired, the chairman moved, in accordance with notice, that Dr. Johnston, Dr. Kelynack, and Dr. Lister be elected visiting physicians to the hospital at Northwood for a period of twelve months from this date."

The third letter was written by the chairman of the committee of management to the resident medical superintendent at Northwood, informing him of the election of Dr. Johnston, Dr. Kelynack, and Dr. Lister as visiting physicians to Northwood, and of the termination of the appointments of Dr. Price and Dr. Whiting, and concluding: "I must ask you not to allow any physician to treat the patients except the three above named. I understand you have distributed all the patients between them."

The medical board, at their meeting on May 6th, after considering carefully these letters and the action of the committee of management since their last meeting, felt that the best way of dealing with the difficulty was by moving the following resolution, which was unanimously carried:

> The medical board have learnt with profound regret that the committee of management have seen fit to disregard the recommendation of the board concerning the appointment of the visiting physicians to Northwood. The committee of management will understand that their action places the medical board in a very difficult position, and that if it indicates a definite policy on the part of the committee it is useless for the medical board to tender their advice on medical questions in the future. The medical board hope that this is not the intention of the committee of management, but they consider that the question at issue affects the interest of the hospital in so vital a manner that they recommend that a joint meeting of the committee of management and the medical board shall be held at the earliest possible date for the purpose of discussing the above question, and in this way enabling the medical staff to come to a decision as to their future course of action.

In reply to this request, the honorary secretary of the medical board received the following letter, dated May 20th, 1913, from the secretary of the hospital:

"In reply to your letter below is an extract from the proceedings of the general committee at their meeting on the 14th inst.: 'Mr. Lawrence moved that this committee regrets that it cannot accede to the request of the medical board for a joint conference. Mr. Attlee seconded. Carried unanimously.'"

This concludes the history of what took place between the medical board and the committee of management up to the resignation of the majority of the staff, July 20th, 1913, and includes the official causes of this resignation as stated in your issue of July 12th. As a fact, however, at the meetings of the medical board on April 1st and May 6th, when the action of the committee of management with regard to the appointments at Northwood was being discussed, it was pointed out that, since Hampstead was admittedly to be sold, Northwood would be the only institution containing beds available for allotment amongst the staff. Under these circumstances it was felt that if it became necessary to alter the arrangement sanctioned by the committee of management in 1909—namely, that all the physicians should have beds under their care, the physicians of the staff should be invited to take charge of the available beds in the order of seniority. In other words, that the committee should have officially offered beds at Northwood to the senior physician, Dr. Tunnicliffe. It was the intention of the medical board to discuss this matter fully at the conference and to point out that by the by-laws the committee of management were bound to refer all medical matters, which clearly includes the duties of the staff, to the medical board before deciding the same, and that in the case of medical appointments the only proper way of doing this was the one established by almost universal precedent—namely, that of asking the medical board to nominate to staff appointments.

In the preceding paragraphs of this statement the communications between the committee of management and the medical board up to the resignation of the latter have been considered. In a correspondence in the *Times* elicited by the resignation of the staff certain new points in defence of the action of the committee of management were advanced by the chairman, particularly that in making the new appointments at Northwood the committee were acting in accordance with the seniority of the members of the staff. We at once pointed out that no beds at Northwood had been offered to the senior physician. The chairman has replied that Dr. Tunnicliffe's name was actually proposed and withdrawn at Dr. Tunnicliffe's request. We must here state, as we did in the *Times* quite definitely, that no such proposal and hence no such withdrawal ever took place. We must again challenge the chairman, as we did three months ago, to produce any minute or any written communication of any kind confirming this statement. We must point out that since Northwood was, or would soon become, the only institution containing in-patients, a refusal to accept the charge of beds there practically amounted to resignation from the hospital staff. Are we, then, to believe that such a refusal at a meeting of the committee of management was not deemed worthy of a minute?

Our excuse for trespassing on your space at this length is that, having already mentioned, in our letter of resignation, the holding of an inquiry into the management of the hospital, we do not wish to continue this correspondence; we venture, however, to submit, and we feel sure that most of our professional brethren will agree, not only that our resignation was an inevitable sequence of the summary dismissal of the junior physicians from their appointments, the refusal of the committee of management to hold a conference with us, and their neglect to formally offer beds to the senior physician, but was justified, and indeed necessitated, by any one of these actions alone.—We are, etc.,

F. W. TUNNICLIFFE,
A. J. WHITING,

Late Chairman and Honorary Secretary of the Medical Board of the Mount Vernon Hospital, and Representatives of the Medical Staff on its Committee of Management.

November 28th.

TREATMENT OF INSURED INJURED PERSONS IN THE TERRITORIAL FORCE.

SIR,—I should like, through the medium of your columns, to recount an unfortunate experience of mine, as a warning to a few of your readers whom it may concern.

Last August one of my patients on my panel list came to me for treatment. He had a few days before met with an accident while in pursuance of military duty as a soldier of the Territorial Force. I told him to report the matter to his company officer, as Regulations lay down a definite line of action to be adopted in such cases—that is, treatment at a military hospital or other alternatives at public expense. This I happened to know as a R.A.M.C.(T.) officer. However, his regiment did not do the correct thing, and asked me by a verbal message sent by the patient, to attend the customary board of inquiry. I went, and there asked in what capacity I attended—as an officer or as the soldier's civilian doctor. The question was hedged, and I spent two hours at the board.

Subsequently I sent in my account to the regiment, and it was, of course, returned with no authority to pay. I adopted the usual procedure, and appealed to higher authority, who, being misled as to facts, decided against me on the ground that I was *willing* to attend the board (a willingness I never expressed). They further criticized my attending a board on a verbal message, and did not express any opinion as to whether my professional services should be remunerated or not.

The voluminous correspondence, with about fifty signatures, has taken four months to get thus far, but one point to notice is that R.A.M.C.(T.) officers should not attend boards on a verbal message.

Incidentally, quite a big question is opened up if panel doctors have now to be responsible for the treatment of any of their panel patients who may happen to meet with injury while in pursuance of military duty.

I have now communicated with the Commissioners on the subject, to ascertain whether insurance funds should

go to pay for services with regard to which another Governmental department has cut-and-dried regulations.

This letter is not intended as a "bedside wrangle over fees," but as a statement of an unsatisfactory principle, for it appears that some of our authorities share with a section of the general public the idea that a panel doctor has "got" to do anything they want doing for nothing. The remedy lies in the doctors' hands.—I am, etc.,

Folkestone, Dec. 2nd. B. Richardson Billings.

Medico-Legal.

ALLEGED CANVASSING BY FRIENDLY SOCIETY.

Judgement.

At a sitting of the Chancery Court for the County Palatine of Lancaster, at St. George's Hall, Liverpool, on December 1st, His Honour Vice-Chancellor Dudley Stewart-Smith, K.C., delivered the following judgement in the case of Dr. Youatt *v.* Wright. [The earlier proceedings were reported in the British Medical Journal of November 8th, p. 1259]:

This is an action of an unusual character. The plaintiff, who is a retired medical practitioner practising at Prescot, seeks an injunction to restrain the defendants from procuring by means of canvassing or touting persons to be patients of the plaintiff in such a manner that if the same were done with the sanction or acquiescence of the plaintiff it would amount to "an act of infamous conduct" on his part within the meaning of Section 29 of the Medical Act of 1858. The defendants are the executive committee and officials of the Prescot Friendly Societies' Association, and represent a number of friendly societies who ensure medical benefit to their members.

As a result of the passing of the Insurance Act, the terms upon which medical men in Prescot agreed to render medical service to members of friendly societies were the subject of rearrangement. Arrangements were duly made dealing with those persons who were insured under the Act. Some of the friendly societies represented by the association ensure at varying rates of payment medical benefits to persons under the age of 15, called juvenile members, who are not insurable under the Act. Negotiations with the medical men to render medical service to juvenile members had been for some months past carried on by the executive committee. Interim arrangements were made, but these were to terminate on April 30th, 1913. On April 28th a general meeting of the association was held, at which it was decided to give notice terminating the contract for juveniles on April 30th, and it was further resolved that one doctor be selected by whom juveniles should be attended as private patients. The selection was made by ballot, when the plaintiff was the doctor selected. It was further resolved that 600 circulars be printed to inform the parents of juveniles that the contract to provide medical attendance would terminate on April 30th. The number of insured juveniles is stated to be 450. On April 28th the circular was sent out to all their parents to this effect:

> We beg to inform you on behalf of your own Society that the contract to provide Medical Attendance to Juvenile Members ceases on April 30th, 1913. For any further information on the subject please apply to your Secretary.

The secretaries of the different societies were either present or represented at this meeting, and in pursuance of the resolution then passed they immediately commenced to recommend to such of the parents of juveniles who made inquiries of them that the insured children were to be sent to the plaintiff for treatment as private patients, and that his fees would be provided by the societies. Several instances were proved in which parents had applied to the secretaries for information and been told to take their children to the plaintiff, which they accordingly did. This practice has continued down to the present time, and the plaintiff has in many cases attended these children.

The resolution was passed and the selection made without previous communication to the plaintiff, who only learnt of this having been done through information given him by another medical practitioner in the district. He at once communicated with his medical brethren, and both by letter and verbally to the officials of the association protested against the course which the association was taking, and on May 2nd his solicitors wrote to the secretary of the association pointing out that the secretaries of certain societies had in furtherance of a common agreement advised persons that the plaintiff was to be seen as against any other medical practitioner, and that his account would be met, and further pointing out that this course might lay the plaintiff open to very serious penalties if the General Medical Council considered that he was either promoting canvassing on his behalf or taking advantage of that canvassing if done by others. The secretary replied on the 3rd that the association had not authorized any canvassing, nor did he know of any; that he had not issued instructions to secretaries, and therefore could not withdraw them. Both of these statements was in my opinion inaccurate, and are stated in such a way as to mislead the recipient of the letter.

On May 5th the plaintiff himself wrote to a Mr. Heyes, a prominent official of the association, protesting against the practice of canvassing, and threatening legal action. Further correspondence ensued, the association maintaining its position, and these proceedings were instituted.

In December, 1905, the General Medical Council issued a circular to the medical profession warning them against employing agents or canvassers for the purpose of procuring persons to become their patients, and that any medical practitioner guilty of such practice would render himself liable to be charged under the 29th Section of the Medical Act, 1858, with infamous conduct in a professional respect, and that if found guilty the Council might, if they thought fit, direct his name to be erased from the *Medical Register*. This warning was repeated in a circular which was issued on March 14th, 1913, in the form of a letter addressed to the Chairman of the National Insurance Commission by the President of the General Medical Council. The definition of infamous conduct in a professional respect is given in the judgement of Lord Esher in Allinson *v.* the General Medical Council, reported in (1894) 1 Q.B., 750. At page 76, Lord Esher says:

> I adopt the definition which my brother Lopes has drawn up of at any rate one kind of conduct amounting to "infamous conduct in a professional respect"—namely, "If it be shown that a medical man in the pursuit of his profession has done something with regard to which it would be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute and competency," then it is open to the General Medical Council to say that he has been guilty of "infamous conduct in a professional respect."

In that case a decision by the General Medical Council against a medical man who had advertised for patients, and had therefore been guilty of such conduct, and whose name had been erased from the *Register*, was upheld, as the court could not review their decision.

It is urged, on behalf of the plaintiff, that the conduct of the association in directing the secretaries of the societies to recommend patients to the plaintiff (1) places him in danger of having his name erased from the *Medical Register;* (2) is calculated to embroil him with his professional brethren, so that he will not be able to obtain from them that assistance which in some cases he may require, and that he is entitled to an injunction to restrain them from a course of conduct which would put him in that position and cause him to suffer such grave inconvenience.

My conclusion from the evidence is that he will not be, in fact, placed in that peril. He has not himself canvassed for patients or sanctioned canvassing by any one else, but, on the contrary, has vigorously and publicly protested against the conduct of the association, and has placed the whole of the facts before his local medical brethren and the officers of the British Medical Association. Two of the latter were called as witnesses—Dr. Alfred George Bateman, the general secretary of the Medical Defence Union, and Dr. Alfred Cox, who is the Medical Secretary of the British Medical Association. The evidence of both these gentlemen was to the effect that the plaintiff had done everything he possibly could, and that he had not been guilty of unprofessional conduct in the circumstances.

When a child is brought to the plaintiff's surgery he has to take one of three courses: (1) To attend the child without inquiry; (2) to inquire whether the child is an insured person; or (3) refuse to attend children altogether. In either of the two latter cases he runs the risk of seriously damaging his practice, and in the first case he may incur suspicion and perhaps even arouse the jealousy of his medical brethren. That the action of the defendants has placed the plaintiff in a difficult and delicate position there can be no doubt, but the question is whether he has any legal remedy. There is no evidence that any official of the association or of the societies has represented the plaintiff to be a club doctor or medical man employed by the societies as such or made any other representation about him. The case of Routh *v.* Webster reported in 10 Beavan at page 561 does not, therefore, seem to me to have any application to the present. Walter *v.* Ashton (1902) 2 Chancery, at page 282, which was also relied on was a case of injury to property and an exposure to risk or liability, elements which I cannot find in the present case.

The defendants allege that they are bound to provide medical benefits for their juvenile members, and that the sum of 8s. 6d. per head per annum required by the medical practitioners is beyond the funds at their disposal for the purpose. They contend that they may lawfully recommend the plaintiff as a medical man to attend these juvenile members as private patients, and that any inconvenience to him from that course arises from professional rules or etiquette with which they have no concern. I think this contention is well founded. The recommendation is in itself lawful. It is impossible to carry on the affairs of life without doing things more or less likely to cause loss or inconvenience to others, or which obviously tend that way, and in such manner that their tendency cannot be avoided unless by not acting at all. The exercise of ordinary rights in an ordinary way is no wrong, even if it causes damage. Trade competition is an illustration of this principle. Choosing when, where, and with whom one will work is another (Allen *v.* Flood, 1898, Appeal Cases 1). Nor would an averment and proof of malice make any difference in such a case (Mayor of Bradford *v.* Pickles, 1895, Appeal Cases 587). An action which does not amount to a legal injury cannot be actionable because it is done with a bad intent.

I am therefore unable to give the plaintiff any relief, and must dismiss the action. The action of the defendants has

undoubtedly caused the plaintiff serious annoyance and expense. There is no reason given by them why they did not give a choice of doctor to the juveniles who were treated as private patients at the expense of the societies. They are not bound, however, either to have or disclose such a reason.

If the facts relating to the passing of the resolution of selection had been fairly disclosed to the plaintiff, I am by no means sure that any action would have been brought. The actions of the defendants have been concealed, and I regret to say misstated, especially in the uncandid letter of May 3rd, and I make no order as to costs.

Public Health AND POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

AT a meeting of the council of this association on November 10th, Dr. Gidley-Moore in the chair, the following matters came under consideration.

Payment for Drugs.—It was reported that the medical officers of West Ham Union had been induced to consent to pay for a portion of the drugs which it had been proposed should in future be supplied by the guardians themselves, while the guardians had agreed that the salaries paid to medical officers should remain unchanged, so that their remuneration allowances would not be affected by the drug payments. The council expressed its regret at the surrender of the important principle involved, and expressed its doubt as to whether superannuation allowances would be found to be safeguarded by the arrangement indicated. They were by law based on the total emoluments of an officer at the time of his retirement, and payments made for drugs would probably be deducted.

The Position at Burnley.—It was reported that the conditions in the Burnley area were still very unsatisfactory. In only three of the fifteen districts were there medical officers, and though the three gentlemen appointed were certainly not overworked, it was not right to assume that the medical requirements of the union had been properly met. In the opinion of the medical profession in the area this was by no means the case. In present circumstances it was practically impossible for many of the poor to obtain medical assistance except from private practitioners. Probably the guardians were tired of the controversy, and, in common with others, would welcome mediation. It was also reported that the member of Parliament for Burnley had promised to see Mr. Burns personally on the subject, so that if an agreement had not been previously reached the matter might be brought before the House of Commons when it next met. After discussion of the matter the council instructed its honorary secretary to write to the Honorary Secretary of the Burnley Division of the British Medical Association, offering its services in any way that the local profession might consider desirable, and also to write on the subject to the Public Health and Poor-law Committee of the British Medical Association itself.

Under-payment of Medical Officers.—It was reported that the action of the council and of the British Medical Association had resulted in the salary of a recently appointed district medical officer in the Shoreditch union being raised to £150 per annum.

Panel Patients.—The Honorary Secretary reported that in regard to the appropriation by the Bethnal Green guardians of fees for attendance on panel patients among their employees, the infirmary medical officers of the union had not given the assistance that might have been expected, and the demands of the guardians had been accepted. The council expressed its regret at the incident, and several members commented on the apathy of some members of the Poor Law Medical Service, and on the little pains that many of them took to assist in maintaining their rights.

In this connexion the Honorary Secretary (Dr. Major Greenwood) said that in his opinion the Council of the British Medical Association had recently taken a retrograde step in its Poor Law policy. At the Representative Meeting of that Association at Brighton the speaker had succeeded in obtaining the passage of the following resolution by an almost unanimous vote:

> 1. That this meeting strongly condemns any arrangement made by indoor Poor Law medical officers with boards of guardians in reference to insured members of their staffs, whereby the whole or a portion of the fees paid to the said medical officers by an insurance committee is handed over to the treasurer of the guardians.
> 2. That it is of opinion that any Poor Law medical officer who accepts such a condition is acting in a manner derogatory to the medical profession and against the interests of the Poor Law Medical Service and the profession.

Subsequently this resolution had been considered by the Insurance Act Committee of the British Medical Association, on which the Honorary Secretary represented the Poor Law Medical Service. Despite his protests that Committee had recommended the Council of the British Medical Association to advise the next Representative Meeting to rescind the latter half of the resolution, the reason put forward for this course being that—

> It left the Association no option but to hold a practitioner, who acted contrary to the line of policy indicated, as having acted in a manner derogatory to the medical profession, even though in many cases that officer might be bound by the terms of his legal agreement.

The Honorary Secretary thought that the proposed action would give encouragement to disloyalty such as had recently occurred in Bethnal Green. Rescission of the latter half of the resolution would destroy the pith of the first part, which plainly implied that the conduct in question was derogatory; if it were derogatory, why should it not be treated as such? It was no use the British Medical Association blowing hot and blowing cold in this way, and at the forthcoming Representative Meeting he would do his best to prevent the rescindment in view. Meantime he would ask those present to do all they could in their respective districts to persuade Representatives of their Divisions to vote against the proposal. The matter having been discussed, the council unanimously approved the views of the Honorary Secretary, and several members expressed a hope that the British Medical Association would not detract from the service which it had frequently rendered to Poor Law medical officers by weakening the force of the excellent resolution passed at Brighton.

Attendance on Police Cases.—The Honorary Secretary also reported the action taken by him in regard to the facts brought to notice by a medical officer of the Wigan Union. During the last three years the relieving officer, at the request of the police, had frequently issued orders for the attendance of this medical officer on cases at the police station, such as ought to be treated in the first instance, at any rate, by the divisional surgeon. Friction having arisen from this cause, the guardians had referred the matter to the Local Government Board. The Board, in its reply, said that if any relieving orders were considered to have been improperly issued the matter should be brought before the guardians, but it said nothing as to the legality or otherwise of the action in question. In view of the important principle involved, the speaker had invited the attention of the Public Health and Poor Law Committee of the British Medical Association, and also of the United Kingdom Police Surgeons' Association. The result was that the Public Health Committee of the British Medical Association had instructed the Medical Secretary to approach both the Local Government Board and the Home Office on the subject, and this he had duly done. The Honorary Secretary had himself also written to the Local Government Board. The council having considered the report of the Honorary Secretary, expressed the hope that the weighty considerations submitted to the Government would prove effectual, and thanked the Honorary Secretary for the care and attention he had given to the matter.

Drug Stocktaking.—On consideration of a complaint by a workhouse medical officer in reference to his being required to take stock of drugs in the workhouse dispensary, the council agreed with the Local Government Board that in workhouses in which there was no dispenser a medical officer might properly be expected to afford some indication to the guardians of the state of his stock of drugs.

Provision of Medical Benefit.—The council having considered a communication from a workhouse medical officer in reference to the difficulties created by some employees of guardians coming under the Insurance Act, and others not doing so, expressed an opinion unfavourable to workhouse medical officers contracting to attend uninsured employees on the same scale as those allowed by the Act. They should be treated as private patients. It would, however, be a good thing if all boards of guardians adopted schemes whereby they took upon themselves the provision of medical benefit for all their employees.

OVERCROWDING OF HOUSES.

A. M. W.—The test of overcrowding which is applied by the Registrar-General is more than two persons to one room in any house. The amount of cubic space per person which should be available in a dwelling-house, and below which overcrowding would be said to exist, has never been defined either in an Act of Parliament or by any Regulation of the Local Government Board. Overcrowding of a house is a nuisance which can be dealt with under the Public Health Act, 1875, but the overcrowding must be proved to be dangerous or injurious to the inmates of the house, in the same way that any other nuisance must be proved to be dangerous or injurious to health, before steps can be taken to abate it. Every case must be taken on its merits, and it would be impossible to fix a standard of cubic space which would apply in all circumstances and conditions. For example, the size of the window openings, the absence or otherwise and the efficiency of a chimney flue, and the height of the rooms, must be considered, equally with the amount of cubic space, when deciding whether overcrowding exists. It ought to be no more difficult to convince a sanitary authority that there existed a nuisance from overcrowding than to convince it that any other nuisance existed.

Obituary.

CLEMENT GODSON, M.D., C.M.ABERD.,

CONSULTING PHYSICIAN, CITY OF LONDON LYING-IN HOSPITAL; FORMERLY ASSISTANT ACCOUCHEUR, ST. BARTHOLOMEW'S HOSPITAL; KNIGHT OF GRACE OF THE ORDER OF ST. JOHN OF JERUSALEM.

THIS well-known obstetric physician died on November 26th, at the age of 68, at his town residence, Montagu Mansions, Portman Square. He had for some time been in bad health. Clement Godson was the son of Mr. Charles Godson, F.R.C.S.Eng., who practised for many years at Barnet. He was educated at King's College School, London, and became a student in the Medical School of St. Bartholomew's Hospital in 1863. He was dresser to Mr. Luther Holden, and studied more particularly under the Physician-Accoucheur, Dr. Greenhalgh. That obstetrician, now almost forgotten, was a link between the old type, represented by Conquest, Ashburner, Lever, and other once well-known physicians, and the modern scientific teacher of midwifery. Greenhalgh had many of the defects of those old-fashioned doctors who worked among midwives and were seldom many hours away from the lying-in chamber, but possessed from the days of their apprenticeship a sound knowledge of the management of pregnant and lying-in women, babes and sucklings, and nurses. But Greenhalgh differed from them in also understanding the requirements of the modern hospital student. His clinical teaching was excellent, and he spent much time in instructing his more industrious pupils. Among them was Clement Godson. In 1868 he qualified, not only as M.R.C.S., but also as Licentiate in Midwifery, a qualification which was suppressed in 1875. About 280 holders of this licence survive at the present day. He became midwifery assistant at St. Bartholomew's Hospital, and in 1872 took the degrees of M.B. and C.M. at Aberdeen. In 1874 he graduated M.D. in the same university and became M.R.C.P.Lond.

In 1875 Godson was elected assistant physician-accoucheur to St. Bartholomew's Hospital, being the first to fill that then new appointment. He held the office for sixteen years, under his seniors Drs. Greenhalgh and Matthews Duncan, and resigned it on the death of the latter in 1890. Godson also became a member of the staff of the Samaritan Free Hospital for a few years, and was more permanently connected with the City of London Lying-in Hospital, to which at the time of his death he was consulting physician. He was also appointed consulting medical officer to several local charities in London.

In the earlier years of his career Godson committed much of his experience to paper. Shortly after his qualification in 1868, when midwifery assistant to Dr. Greenhalgh at St. Bartholomew's, he drew up the statistics of the midwifery practice of that hospital for the preceding seven years, altogether 5,734 deliveries; his report was published in the hospital's *Reports* for 1869. In 1876 Dr. N. Cooper Rose, of Hampstead, read at a meeting of the Obstetrical Society of London the results of 1,200 consecutive cases of labour in his own practice. A few months later Godson, following a good example, read at another meeting of the society obstetrical statistics compiled from the records of his father's thirty-five years' practice. This most instructive communication, published in the eighteenth volume of the society's *Transactions*, deserves resuscitation. The observations of father and son, and of Playfair and Braxton Hicks could not fail to interest the modern obstetrician. In 1881 Godson read at the same society a paper on the treatment of spasmodic dysmenorrhœa and sterility by dilatation of the cervical canal with graduated metallic bougies; the method, he said, had been suggested to him by his senior colleague, Dr. Matthews Duncan. The paper was mostly important on account of the discussion, which shows us still, in the pages of the twenty-third volume of the *Transactions*, that that odious instrument, the metrotome or hysterotome, was already in discredit in 1881, whilst there were still men who used sea-tangle tents followed by intrauterine pessaries. To the JOURNAL Godson contributed a good report of a Porro's operation in his own practice. To *Quain's Dictionary of Medicine* he added articles on puerperal diseases and kindred subjects.

Godson, as has been explained, took an active part in society work. He joined the Obstetrical Society in 1871, and became honorary secretary and vice-president, and for several years was a member of the board for the examination of midwives. He joined the British Gynaecological Society, and was elected its president in 1895. When the amalgamation was completed in 1907 Godson became a Fellow of the Royal Society of Medicine, and was made vice-president of the Obstetrical and Gynaecological Section. In 1895 he was appointed a governor of St. Bartholomew's Hospital.

Clement Godson did not possess those qualities by which some of his more distinguished contemporaries were enabled to make those conspicuous strides in the advance of aseptic and operative midwifery and gynaecology so prominent in the history of medicine during his lifetime. Yet he was an excellent practical obstetrician, and avoided the common error of supporting with enthusiasm each new-hatched, unfledged operative or therapeutic method, claiming it to be infallible on the score of a short experience, and then rejecting it just as rashly in favour of some later and equally questionable novelty.

In 1873 Godson set up in practice in the West End of London. His accomplishments made him highly popular in society, and he had for many years a good practice. When in his prime he was known as a keen deer stalker and a good shot, and he delighted in amateur photography. Latterly he spent most of his leisure in gardening at his country house near Westgate-on-Sea.

Although by profession a woman's doctor, Clement Godson took much interest in our citizen soldiers. At the date of his death his name appeared in the *Army List* under "Officers Retired from the Territorial Force" as Surgeon-Colonel, R.A.M.C. (T.F.). He had been Officer Commanding the 2nd London (City of London) General Hospital Territorial Force, and had received the Volunteer Decoration. Godson was a keen Freemason and one of the founders in 1896 of Rahere Lodge, attached to St. Bartholomew's Hospital. He was also well known among City men of distinction, and became Master of the Worshipful Company of Shipwrights.

Dr. Godson married Alice, the second daughter of the late Rev. Robert Biscoe Tritton, Rector of Bognor, Sussex, by whom he had four sons and four daughters. The eldest son, who studied medicine at St. George's Hospital, where he held the office of house-surgeon, is a captain in the Indian Medical Service. The interment of the deceased physician took place at Marylebone Cemetery, Finchley, after a memorial service at St. Mary's, Bryanston Square, on Saturday last, November 29th.

REES GRIFFITHS PRICE, M.D.DURH., L.R.C.P.EDIN.,

PAST PRESIDENT OF THE SOUTH WALES AND MONMOUTHSHIRE BRANCH.

THE news of the sudden death of Dr. R. G. Price, of Carmarthen, has been received with the greatest regret by the profession in South Wales, by whom he was widely known and generally respected. Dr. Price, who had attended the meeting of the South-West Wales Division at Carmarthen on November 25th, was taken suddenly ill in the early hours of November 28th, shortly after visiting a patient near at hand, and died within one or two hours, in spite of the attention given to him by Dr. Parry.

Rees Griffiths Price received his medical education at Glasgow, and obtained the diplomas of L.R.C.P.Edin. and L.F.P.S.Glasg. in 1876. Later on he took the M.D. degree of the University of Durham. After practising for a time at Treorchy he settled about twenty-five years ago in Carmarthen, and became physician to the County Infirmary there. He acquired a large practice in and around Carmarthen, and was as popular with his patients as he was with his profession. He was, indeed, liked by all, and one special feature of his character was the encouragement he always gave to the younger members of the profession.

He was a loyal and energetic member of the British Medical Association and one of its staunchest supporters in South Wales. He was a regular attendant at meetings of the local Branch and Division, and had been President of the South Wales and Monmouthshire Branch and

Chairman of the South-West Wales Division. At the time of his death he was a member of its Executive Committee and of the Local Medical Committee, and was nominated only last week to be a member of the Panel Committee for the county of Carmarthen.

His death leaves a gap which will not easily be filled, and his influence and wise counsels will be much missed in the present troub'ous times.

At a special meeting of the South-West Wales Division at Carmarthen on December 2nd, Dr. D. J. Williams of Llanelly, who was in the chair, speaking as a life-long friend of Dr. Price, said that both of them had been apprentices of Dr. Pearson Hughes of Llandovery. After completing his medical training at Glasgow, Dr. Price had held a large colliery appointment in Treorchy, in a district which had been a great training school for many eminent surgeons and physicians. After settling at Carmarthen in 1886 he acquired a very large private practice, into which he threw himself heart and soul; his soundness as a practitioner, his geniality and wit, found full response in the confidence and affection of his patients. One of the original members of the South-West Wales Division, he took the keenest interest in its work; he always sought to induce the younger men to join the Association, and ever manifested the greatest interest in their progress. When president of the South Wales and Monmouthshire Branch he gave an address on recent remedies, a favourite subject of his. Under a homely personality beat a heart responsive to the needs of every one in adversity or suffering, and full of affection in all the relations of life. These qualities led to unsparing efforts at all hours and during inclement w ather on behalf of his patients when his own health should have prescribed care and restraint from work. The Division adopted a resolution of condolence with Dr. Price's family, and the members present afterwards attended the funeral. The resolution was in the following terms:

> That this meeting of the members of the South-West Wales Division of the British Medical Association places on record its high appreciation of the services of the late Dr. Rees Griffiths Price, Carmarthen, an original member of the Division, and the great loss the Association has sustained by his sudden death.

Dr. Price leaves a widow and three children. His two sons are Dr. Ernest Price, Cardiff, and Surgeon Alfred R. Price, M.B., R.N., at present serving in the *Indomitable*. His daughter is the wife of Dr. Frank Thomas, and is herself a member of the medical profession.

The Services.

THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

THE Lords Commissioners of the Admiralty have adopted the following minutes, in accordance with the recommendations of the Medical Consultative Board, which were made with the object of remedying to some extent the shortage in the medical branch of the Royal Navy:

1. The disciplinary control (as far as minor punishments are concerned) o. the sick berth staff has been de egated to the senior medical officers of the three large hospitals at Haslar, Plymouth, and Chatham.
2. The senior medical officer will in future preside at medical surveys.
3. Control of publication of papers on professional subjects is vested in the Medical Director-General.
4. Their Lordships approve of naval medical officers being allowed to engage in private practice and receive fees in the same manner as officers of the Royal Army Medical Corps, so far as compatible with their official duties.
5. Their Lordships approve in principle the proposal to institute a *Journal for the Naval Medical Service* on the lines of the *Journal of the Royal Army Medical Corps*.
6. Their Lordships approve of the senior medical officers at hospitals abroad being in charge of those establishments, subject to the authority of the Commander-in-Chief or senior officer in the same manner as in the case of the large hospitals at home, and directions will be issued to that effect. The necessary alterations will be made in the Navy List, the hospitals affected being Malta, Gibraltar, Bermuda, and Hong Kong.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting.

DR. J. BRINDLEY JAMES (President of the Society of Members of the Royal College of Surgeons of England) writes: Kindly correct error in your paper *re* annual m eting of the Fellows and Members of the Royal College of Surgeons of England. Dr. Vincent Bell said that he dissociated himself from what had been said by the seconder of the resolution; not, as printed in your paper, from the proposer and seconder of the resolution. Being the proposer of the resolution, I wish this error to be corrected. I feel sure that Dr. Bell could not find fault with what I said.

Medical News.

AMONG the papers to be read at the meeting of the Royal Society on Thursday next is one on intermittent vision by Mr. A. Mallock, F.R.S.

ON Tuesday next, at the house of the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., a discussion on the progress of school hygiene will be opened by Dr. James Kerr.

A LECTURE on the properties and use of radium will be given at the Cancer Hospital, Fulham Road, S.W., on Wednesday, December 10th, at 5 p.m., by Mr. C. E. S. Phillips, F.R.S.Edin., honorary physicist to the hospital,

A MONUMENT to the memory of Professor Dieulafoy has recently been erected in the Hôtel-Dieu of Paris. The ceremony of unveiling was the occasion for addresses by Professors Widal and Landouzy, and by M. Mesureur, of the Assistance Publique.

A SEVERE epidemic of enteric fever having caused a number of deaths in the Montauban garrison, Professor Labbé, with the assent of several of his colleagues in the Senate, has submitted to that body a proposal to make antityphoid vaccination compulsory in the French army.

THE British Fire Protection Committee (8, Waterloo Place, Pall Mall, S.W.) has issued a leaflet drawing attention to certain common causes of outbreaks of fire in connexion with Christmas festivities, and pointing out how such risks may be avoided. Copies of this useful publication, in packets of 10, 25, or 50, may be obtained on written application, if stamps for postage are enclosed.

AMONG a collection of photographs made in Hungary, Germany, Sweden, and New Zealand, now being exhibited at the house of the Royal Photographic Society, 35, Russell Square, W.C., are a series of marine natural history subjects taken by flash light at the Heligoland Marine Aquarium. The exhibition will remain open until December 20th, and visitors are admitted on presentation of their visiting cards.

THE next examination of candidates for the Royal Naval Medical Service will be held at the Examination Hall, Queen Square, Bloomsbury, W.C., on March 30th, 1914, and the following days. Twenty-five appointments are open for competition. Forms of application and further particulars can be obtained from the Medical Director-General, Admiralty, S.W.

WE have received a pamphlet on *The Care of the Teeth* published by the Otago (N.Z.) Division of the British Medical Association and the New Zealand Dental Association. Simply but scientifically written, it is a most praiseworthy attempt to awaken the public to the dangers of bad teeth. The pages on diseases of the teeth and tuberculosis may be specially commended to those responsible for preparing antituberculosis literature. Though the pamphlet contains much that would not pass unchallenged in any large assembly of dentists, it cannot fail to influence beneficially the public to whom it is addressed.

A POST-GRADUATE course on the feeding and care of infants, which has been organized by the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, is to be given in January, commencing on Monday, January 12th, and terminating on Thursday, 22nd. The work will include daily lectures by various authorities, practical demonstrations in regard to the bacteriology and chemistry of milk, and visits to institutions where work is in progress. The fee for the course is one guinea. To certain meetings of the class laymen will be admitted on payment of a small fee. Applications

for admission to the course should be sent to the secretary of the association mentioned, at 4, Tavistock Square, W.C.

THE Convocation exercises of the American College of Surgeons were held in Chicago on November 12th. The list of members of the College were read by the Secretary, Dr. Franklin H. Martin, of Chicago, and the President, Dr. John M. P. Finney, of Baltimore, then pronounced them Fellows of the College. The number admitted was 1,050. Sir Rickman Godlee read a message from the Council of the Royal College of Surgeons of England, conveying congratulations and expressing the hope that the College would grow and prosper, and by its influence the ideals and standards of surgery would be advanced and maintained on a high plane. The President urged every member to assist in raising the ideals of the profession. One of the most important functions of a college was to wage a relentless war against the evil practices with which the profession was tainted, chief among which, he said, was the pernicious practice of fee splitting.

THE landmark in the history of 1913 so far as illuminating engineering is concerned is the setting up of an International Commission on Illumination. Mr. Leon Gaster described this new departure in the course of a communication to the Illuminating Engineering Society at its November meeting. Instead of establishing a totally new body, it has been found possible to enlarge the membership and functions of the International (Zürich) Photometric Commission so as to make it available for this wider purpose. The Photometric Commission was formed originally at the International Congress of Gas Industries, held in Paris in connexion with the Universal Exhibition of 1900. Its main intention was to carry out researches on the photometry of gas-lights, in which respect it has done a considerable amount of useful work. The first move was to set up national committees provisionally in various countries to consider the subject, and the scheme matured in August last with an agreement upon the draft statutes at a meeting of representatives in Berlin. The body is to be known as the International Commission on Illumination ("Commission Internationale de l'Eclairage"), and has for its object the study of all questions affecting the lighting industry and the related sciences, and the establishment, as far as possible, of an international agreement on lighting matters. Each country sends ten delegates to the meetings of the Commission. There are illuminating engineering societies in Great Britain, the United States, Germany, and one is shortly to be established in France, and it is provided that such bodies may replace the national committees, and each send two representatives to act on the executive council of the international organization. The Commission has a British honorary secretary, Mr. C. C. Paterson, so that London, which is a link between the Continent and the United States, becomes the official centre from which the business of the Commission is transacted.

AT the annual dinner of the past and present students of the National Dental Hospital, Professor Arthur S. Underwood, who was in the chair, pointed out the desirability of a dental education being regarded from as broad a standpoint as possible. To those students who asked why they were taught so much surgery he would say that it was unpractical to regard any part of the body as if it were an entirely separate entity. A dental surgeon who knew something of the entire human frame could deal more scientifically with the particular part which fell within his field of work. In this connexion Professor Underwood drew attention to a notable piece of work recently performed by a dental surgeon, Mr. Howard Mummery. He had been engaged on research into the nerve supply of the teeth, and had converted into solid knowledge what before was merely guesswork. No doubt many people had for long been ready to assume that the tissue known as "dentine" contained nerve matter, but no one knew this for a fact, whereas Mr. Mummery had now actually shown before the Royal Society minute nerve substance penetrating into the dentine. The toast to the school was acknowledged by its Dean, Mr. Sydney Spokes, who asked the Chairman to distribute the prizes and medals awarded to various students. The most successful students were Mr. F. Elliott Smith, who carried off the prizes for dental anatomy and physiology and for dental pathology and surgery; and Mr. H. C. Carter, who won those for materia medica, operative dental surgery, and also the Rymer Medal. The toast to past and present students was acknowledged by Mr. A. W. Smith and Mr. H. A. Hudson, the winner of the Ash Prize; while Mr. Howard Mummery responded to the toast of the visitors. The toast to the chairman, proposed by Mr. Kenneth Goadby, the Vice-Dean to the school, brought the proceedings to a close.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. K. J. COURTENAY (Wareham), who is attending a case of hydrocephalus in a child aged 14 months, states that the circumference is 39 in. He wishes to know if a greater circumference than this has been observed at the age.

DILATATION OF THE STOMACH.

STENOSIS asks for advice in the treatment of dilatation of the stomach due to atonic condition and gastroptosis with pyloric stenosis in which operation is not considered advisable. Two essential difficulties are met with: (*a*) It is usually extremely difficult to wash the stomach clean by lavage. There appears to be a residuum which is difficult to remove effectively, although many quarts are used for the lavage; (*b*) even daily lavage (before breakfast) is ineffective to prevent troublesome and often very offensive eructations. The degree of flatulence is variable. The drug treatment so far tried (creosote, bismuth, salicylate, charcoal) has not been of much service.

ANSWERS.

TREATMENT OF TERTIARY SYPHILIS.

DR. G. ARBOUR STEPHENS (Swansea) writes: If a "Country Practitioner" injects 8 c.cm. of distilled water subcutaneously twice a week for three weeks he will find the leg ulcer closed up, especially if he order calcium iodide instead of the potassium salt.

DR. DOUGLAS FRESHWATER (London) writes: Salvarsan given intravenously will certainly heal up the ulcer in a short time. A second full dose may be given at the end of a fortnight if the healing is not progressing satisfactorily; generally one dose is sufficient. The intravenous method gives quicker results than the intramuscular, but the latter is very effective. Intramuscular injections of calomel will probably clear up the ulcer if for any reason salvarsan cannot be given.

LETTERS, NOTES, ETC.

THERAPEUTIC SUGGESTION.

DR. R. MACDONALD LADELL (Leeds) writes: The article by Dr. Tom A. Williams on truths about mental healing is one that is bound to attract a good deal of interest, but it is a pity that the "truths" are expressed in such a way as to suggest that there is an impassable breach between psychoanalysis and therapeutic suggestion, and even that they are antagonistic. The facts as related by Dr. Williams show, on the contrary, that the best results are obtained by combining the two methods, and one may be pardoned if on reading the reports of his cases one comes to the conclusion that the principal factor in curing each and every one of them was suggestion. Every hypnotist of experience will join with him in condemning the "bludgeon method" of suggestion. That may be eminently suitable for trained subjects on the music hall stage, but if tried in the consulting room it quickly brings its own refutation. The success of therapeutic suggestion does not lie in making the subject "dependent on one's behest," but in appealing to the patient's own power of reasoning and strengthening his resistance to morbid ideas. Dr. Williams's article properly considered is not a condemnation of suggestion as such, but of suggestion as applied by incompetent and clumsy operators. Dr. Williams's attitude reminds one of that of the prophet of old, who was called in to cure and remained to bless, for assuredly there is much in his article which practitioners of suggestion can point to with triumph.

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